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ASSOCIATED BUILDERS CATALOG

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ASSOCIATED BUILDERS CATALOG CO.
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BUILDING TRADE CATALOGS

**MANUFACTURERS' CATALOGS
of
MATERIALS AND PRODUCTS USED
IN BUILDING CONSTRUCTION**

Classified and Indexed

**SUPPLEMENTED BY
A GENERAL LIST OF MANUFACTURERS
Making Building Products**

**THE "A.B.C." SYSTEM
With the Interchangeable Locked Binder**

Compiled, Distributed and Maintained by
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GENERAL PLAN. SYSTEM OF INDEXES.

PATENTS PENDING.

THIS first unit of Building Trade Catalogs marks the beginning of the "A. B. C." service. The catalogs in this binder are to be included in the subsequent units with pages added or changed to keep the service up to date. Subsequent units will also contain complete catalogs of additional manufacturers. Eventually the service will constitute your catalog library. Suggestions for improvement and criticisms are invited.

Associated Builders Catalog Co.

EXPLANATION OF THE INDEX SYSTEM

1. THE GENERAL INDEX is an alphabetical list of the materials and products of the catalogs. Its office is to direct the inquirer to the Section to which the product sought belongs.

2. THE SECTIONAL INDEX states the 44 divisions under which the catalogs are classified and gives a synopsis of the materials and products of each.

The groups A, B, C, etc., are introduced for a more precise location of catalogs. Many of the catalogs, however, will contain products of two or more groups; they will be placed in the group which embraces their most important product.

3. THE SUB-INDEX, given on the Classification Page of each section, is a detailed alphabetical list of the contents of the catalogs. By the system of numbering adopted, all the important products made by a firm can be quickly found, and, *vice-versa*, the firm names can be found through the product items. On the left of each subscriber's name is given the number and location of the catalog.

4. CROSS-REFERENCES. To meet the case of manufacturers whose catalogs include some products belonging to other sections than the one in which they are placed, a simple system of cross-references has been adopted in order to fully record and index all such products. It will be readily understood by examining the entries under "SPECIAL CLASSIFICATION" following the regular Sub-Indexes, and those under "SPECIAL REFERENCE LIST" at the end of the list of catalog holders of such respective sections.

In the case of firms who have catalogs in more than one section this fact is stated in detail on the title page of every such catalog.

GENERAL INDEX

NOTE.—Specific articles and groups of products only are listed herein, and by their general name only. Details and subdivisions are NOT generally given. The reference is to the SECTION to which the products belong, and there all divisions of the subject are given in the SUB-INDEX.

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Artificial..... 10 A	Billiard..... 44	TEMPERATURE REGU-	tion, <i>paving</i> 26 C	<i>etc.</i> 35 D
Crushed, <i>ballast</i> 13	Dissecting and Op-	LATORS	Bake Ovens..... 8 C	Special Design Fix-
Crushers, <i>steam</i> 3	erating..... 20 A & 27 B	Heating Apparatus,	Burnt Clay—	tures..... 35 D
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Batteries, <i>electric,</i>	<i>kinds</i> 35 A	TEN-PIN ALLEYS	Clocks—	Shoes, Turn-
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A Spun Work.....16 B Stamped Ornaments.....16 B White, paint body.....39 A

Sectional Index

A classified grouping of materials and equipment, arranged in the sequence generally followed in building construction

SECTIONAL INDEX

This Index shows the 44 Sections into which the materials and Products of the Building Trades have been divided. Each section is analyzed by an ample synopsis. Many of the sections are sub-divided into groups for more precise classification of

subjects and placing of catalogs. Products not readily located by the Sectional Index may be instantly found by referring, first, to the SUB-INDEX of the particular section, and, if not found there, to the GENERAL INDEX

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| <p>Section Number</p> <p>1. ARCHITECTS' AND ENGINEERS' OFFICE SUPPLIES
Drawing Materials; Drawing Instruments; Surveying Instruments; Drawing Tables, Drawing Cabinets, Tools, etc.; Blue Printing Equipment</p> <p>2. ARCHITECTS, ENGINEERS, GENERAL CONTRACTORS, BUILDING SPECIALISTS, PUBLICATION</p> <p>2, A Designing and Contracting Architects; Publication Plans and Specifications; Stock-design and Specially-designed Ready-made Houses, Bungalows, Garages, etc.; Portable Steel and Wood Houses, Booths, etc.; Landscape Architects, Gardeners, Contractors
Architectural Engineers; Analytical, Inspecting and Testing Engineers; Experimental Laboratories; Designing and Contracting, Acoustic, Civil, Mechanical, Electrical and Sanitary Engineers; Heating and Ventilating Engineers; Reinforced Concrete Specialists; Vault Engineers; Consulting Engineers</p> <p>2, B General Building Construction; Heavy Foundations and Caisson Work; Concrete and Other Piling; Tall Chimneys; Bridges, Dams, Water Works and Similar Engineering Construction; Building Wreckers and Shorers</p> <p>2, C Photograph Publishers, Architectural Photographers; Architectural and Engineering Books and Magazines; Blue-printing Establishments; Photograph and Loose-leaf Binders</p> <p>3. BUILDERS' CONSTRUCTION EQUIPMENT
Scaffolding; Boom and Hand Derricks; Portable Boilers; Engines and Pumps; Wire Rope, Hemp Rope; Guy Anchors; Tackle; Tramways, Locomotives; Chain and Cable Hoists; Heavy Material Conveyors
Concrete and Mortar Mixers; Stucco Sprayers; Steam Shovels, Buckets; Stone Crushers, Carts, Tools, etc.; Hod and Material Elevators; Rock Drills, Blasting Materials; Steel Sheathpiling; Hand and Hydraulic Jacks, etc.</p> <p>4. WATERPROOFING AND DAMPPROOFING
(Technical Paints and Preservative Coatings see Section 5)
Asphaltum, Coal Tar Pitch, Felts, etc.; Patent Waterproofing Compounds and Coatings; Cement and Concrete Admixtures; Waterproof Portland Cement; Stone Coatings, stain-preventive; Wall Coatings (Plaster Bonds) under plastering; Damp Course; Contracting</p> | <p>Section Number</p> <p>5. TECHNICAL PAINTS AND PRESERVATIVE COATINGS
(Standard Paints, Varnishes, etc. see Section 39)
Dampproofing, Fire-resistant, Acidproof and Metal-protective Paints or Coatings; Graphite, and Graphite Paint; Composition Roof Coatings; Wood Preservatives; Cement-floor Dustproofers; Stone Preservatives and Renovators; Wood Fireproofing; Timber and Lumber Creosoting; Insulating Paint</p> <p>6. CEMENT, LIME, PLASTER, SAND
(Special Waterproof Portland Cement see Section 4)
6, A ROSENDALE Natural Hydraulic Cement; PORTLAND CEMENT, standard, American and imported; Portland Cement, waterproof; Non-staining Cement
6, B BUILDING LIME, all kinds; Hydrated and Hydraulic Lime; Patented Lime; Agricultural Lime, Terra Alba, Land Plaster
6, C CALCINED or Paris PLASTER, all grades; Keene's Cement; Patent Wall Plasters; Prepared Interior Wall Finishes and Stuccos; Asbestos Plaster and Stucco; Asbestos Fire and Chimney Cements; Fire Clay
6, D Ready-mixed (plastic) Cement-and-lime Mortar, for building and plastering; Building Sand; Special Quartz Sand, for facing cement products</p> <p>7. CEMENT, CONCRETE, PLASTER STRUCTURAL PRODUCTS
(Artificial Stone and Marble see Section 10)
7, A Concrete Blocks and Machines; Sewer and Drain Pipe, Flue Pipe, Agricultural Drain Tile; Paving Tile; Roof Tile; Chimney Pots; Electrical Conduits, underground; Fence Posts and Sundry Cement-concrete Castings; Cast Concrete Houses; Concrete Lumber; Cisterns, Silos
7, B GYPSUM COMPOSITION BLOCKS, for fireproof partitions, roofs, columns, insulation work, etc.; Plaster Board; Plaster or Gypsum Studding; Asbestos Composition Studding, Lumber</p> <p>8. BURNT-CLAY STRUCTURAL PRODUCTS
(Floor and Wall Tile see Section 24)
8, A BRICK. Common Building, all manufactures; Pressed Face or Front, all kinds, white-glazed, color-glazed, enameled, fancy effects and rough-face Brick; Molded and Ornamented Brick; Gauged Arches; Paving Brick; Fire Brick; Special-design Brick; Cupola Lining; Glass Brick; Molded Brick Products</p> |
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8, B **FIREPROOF BUILDING BLOCKS.** Dense and Porous Blocks, for floors and partitions; Hollow Brick; Furring Tile, Book Tile, for roofs; Column Furring; Special Interlocking Wall Blocks; Floor Arch Systems of special reinforced design; Application to Domestic Architecture

8, C Sewer and Drain Pipe; Fittings and Fixtures; Subsoil Drainage and Agricultural Tile; Flue Pipe; Chimney Pots and Caps; Glazed Coping; Common Paving Tile; Quarry Paving Tile; Bakers' Oven Tile; Underground Electrical Conduits

8, D **ROOFING TILE.** Spanish Pattern and Shingle Tile; Hips, Ridges, Finials, etc., plain and glazed

8, E **FLAT-TILE COHESIVE ARCH AND VAULT CONSTRUCTION.** Systems and Materials

8, F **ARCHITECTURAL TERRA COTTA AND FAIENCE.** Plain, Ornamented, Natural Shade, Colored, Polychrome; White-glazed, high or matt effects; Color Glazes, Architectural Faience; Panels; Pattern Tile, Fireplaces, Mantels; Drinking Fountains; Ornamental Decorative Products

9. STONE AND MARBLE FOR EXTERIOR AND INTERIOR WORK

(Artificial Products see Section 10)

Granite, Porphyry, Marble, Alabaster, Onyx, Limestone, Bluestone, Sandstone; Stone-working Machinery, Tools; Contractors for Exterior Building Work, Interiors, Fixtures; Mantels; Altars, Fonts; Screens, Pedestals, etc.; Monuments, Mausoleums; Bridge Abutments, etc.; Paving Blocks; Plumbers' Marble Work; Switchboards, Panelboards

10. ARTIFICIAL STONE AND MARBLE

10, A Artificial Stone Products (cement composition), for exterior and interior architectural work; Fountains, Garden Seats, Flower Boxes, Tree Tubs, Urns, etc.; Renovating Work in all varieties of Stone and Marble

10, B Artificial Marble "Scagliola" Imitations of all marble varieties, for columns, wainscoting, trim, fixtures, etc.; Veneered Marble

11. REINFORCED CONCRETE, SYSTEMS AND WORK

(General Metallic Fireproofing see Section 12)

Materials and Methods; Wire-mesh Fabric; Sheet-metal Fabric; Expanded Metal; Bars, Rods, Chain, Girder Frames; Systems, for floors, columns, partitions, walls, roofs

General Building Construction; Engineering Works, such as Retaining Walls, Dams, Sewers, Culverts, Bridges, Stand Pipes, Tall Chimneys, Water Tanks; Reinforced-concrete Piles, etc.

12. GENERAL METALLIC FIREPROOFING AND SPECIAL DEVICES

(Reinforced-concrete-construction see Section 11)

12, A **PLASTERING LATH.** Wire Lath, Expanded-metal Lath; Hangers and Clips; Sheet-metal Punched and Formed Lath; Corner Beads, and Similar Appliances

12, B Protective Corner Bars, for reinforced columns; Special-design Rolled Furring, Studding, Channels, etc.; Sheet-metal (metal lumber) Beams, Studding, Furring, etc.

13. BUILDING MATERIALS AND GENERAL SUPPLIES (not Manufacturers)

(Builders' Construction Equipment see Section 3)

General Supply Houses and Distributors of Building Staples, such as: Brick, Lime, Cement, Sand, Gravel, Crushed Stone, Road Dressing, Plaster, Lath, Fireproofing, Drain Tile, Roofing Slate and Tile, Nails, Paint, Sheathing Papers, Felt, Waterproofing, etc.

14. STRUCTURAL STEEL AND IRON

(Architectural and Ornamental Iron and Bronze see Section 15)

(Builders' Iron Work see Section 18)

Cast-iron Columns, Posts, Footing Bases, etc.; Rolled-steel Shapes; Steel Framing, Beam and Plate Girders, Skeleton Frames; Work for Tunnels, Bridges, etc.; Cement-filled Pipe Columns; Boiler-plate Stand Pipes and Smoke Stacks, Tanks for all Purposes, Riveted Pipe, etc.

15. ARCHITECTURAL AND ORNAMENTAL IRON AND BRONZE

(Builders' Iron Work see Section 18)

(Structural Steel and Iron see Section 14)

15, A **CAST AND WROUGHT WORK.** Fronts, Show Windows, Stairs; Elevator Cars, Doors, Enclosures, etc.; Balustrades, Railings; Crestings, Finials, and Weather-vanes; Grilles, Fencing, Doors, Gates, Windows, Trim; Fireplaces; Drying Frames; Window Guards; Marquees; Tablets, Mausoleum Work; Fountains, ornamental, drinking; Statuary, Lamp Posts, Garden Furniture, Fixtures, etc., in iron, bronze, brass and other metals

Special Shapes and Processes; Art Iron Work and Bronze; Registers for Heating and Ventilation; Prison Cells; Cast and Wrought Ornaments; Cast-metal, Rolled-metal and Wrought-metal Moldings; Patent Pressed-metal Columns; Steel Flag Poles

15, B Rolled-metal Sash and Frames; Rolled-steel Casement Windows; Rolled-steel Bar Skylights, and Sash Operators

15, C Cast-iron Pipe, for drainage and water supply; Cast Specialties and Sundries; Cast Flue Linings, Chimney Tops, etc.

15, D **WIRE WORK AND EXPANDED-METAL PRODUCTS.** Materials, Cloth, Netting; Fencing, Railings, Gates; Garden Furniture; Bank Cages; Bins, Wine Racks, etc.; Door Mats; Signs; Window Guards

15, E **PRISM-GLASS AND IRON-FRAME LIGHTS.** Cast-iron Frame and Reinforced-concrete Pavement Lights, Floor Lights; Prism-glass and Iron-frame Skylights; Trap Doors, Window Lights, Canopy Lights; Prism Glass Store Lighting; Pressed, Sheet and Cast Prism Glass of all varieties

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16. SHEET-METAL WORK AND PRODUCTS

(Sheet-metal Beams, Studding, Furring, Lath see Section 12)

- 16, A **SHEET-METAL PLATE FOR ROOFING, ETC.** Steel and Charcoal-iron; Roofing Tin (Terne Plate) and Bright Tin; Steel Standing-seam Sheet Roofing; Galvanized Iron; Corrugated Iron; Asbestos-covered Plates; Toncan Plates; Monel Plates; Ingot Iron, Sheet Copper, Zinc, Lead, Aluminum, etc., for metal roofing and other purposes; Roofing Work Contracting
- 16, B **ARCHITECTURAL WORK.** Cornices, Trim, Snow Guards, Siding, Shingles; Gutters, Leaders, Crestings, Finials, Ridges, Hip Rolls; Sundries; Metal Ceilings and Wainscoting; Stamped Ornament; Statuary; Enameled and Marbleized Metal Tile and Trim
Cold-rolled and Cold-drawn and Pressed Metal Moldings for all Architectural purposes
- 16, C Skylights, sheet-metal and combination styles; Turret Sash Operators; Scuttle Openers; Roof Ventilators; Chimney Cows
- 16, D Standard (Underwriters') and General Fireproof Window Frames and Sash, Shutters, Doors, Trim, Partition, Elevator Enclosures, etc., all-metal and metal-clad; Pressed Sheet-metal Factory and Warehouse Sash
- 16, E General Sheet-metal Work, for boilers, heating and ventilation; Boiler Breechings, Smoke Stacks, Ducts, Chutes; Spiral Pipe; Tanks, iron, copper, zinc, etc.

17. PROTECTIVE DOORS AND SHUTTERS (Special Design) AND GENERAL SAFETY APPLIANCES AGAINST ACCIDENT, FIRE, LIGHTNING, ETC.

(Standard Underwriters Doors and Windows see Section 16)

- 17, A Special Warehouse and Elevator-car and Shaft Doors, horizontal and vertical-sliding; Vertical-folding Warehouse Doors or Shutters; Rolling Steel Doors and Shutters; Automatic Elevator-wellhole Doors and Gates; Protective Window Screens
- 17, B Patent Fire Escapes, stationary and portable; Fire-fighting Apparatus and Equipment; Hose, Hose-Reels, Standpipe Valves; Fire Engines; Fire Hydrants; Portable Extinguishers, mechanical and chemical
Lightning Rods; Window Cleaners' Belts; Safety-exit Door Devices; Safety Stair Treads, Door Saddles, Platforms, etc.; Theater Steel and Asbestos Curtains; Automatic Sprinkler Systems; Floor and Roof Scuppers, etc.

18. BUILDERS' IRON WORK AND STRUCTURAL HARDWARE

(Door and Window Hardware see Section 19)
(Structural Steel and Iron see Section 14)

(Architectural and Ornamental Iron see Section 15)

Nails, Spikes, Screws; Bolts, common, anchor, expansion, toggle; Chain; Beam Anchors, Bridle Irons, Hangers, Boxes; Post Caps and Bases; Truss Irons; Chimney Bars; Fireplace Throats; Brick Handlers; Wall, Stone and Terra Cotta Anchors; Wall Ties, or Brick Bonds; Wall Plugs; Flue Doors; Soot Doors; Cellar Window Chutes, etc.

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19. BUILDERS' GENERAL HARDWARE

(Builders' Iron Work, Nails, Spikes, etc. see Section 18)

- 19, A **STANDARD AND SPECIAL HARDWARE** of all descriptions, for hanging and securing doors, windows, blinds, separate sash, etc., i. e., Locks, Butts, Hinges, Spring Hinges, Standard and Overhead Sash Pulleys, Holdfasts, Transom Openers, Door Holders, Door Checks; Sash Chain, Steel Ribbon, Cord
Shutter Fixtures, Casement Hardware; Drawer, Cabinet and Furniture Hardware; Sliding-door Hangers, Swivel Hangers, Gear Sash Operators, Balance Door Fixtures, Revolving Window Fixtures; Fire-door Hangers and Hardware; Store-fixture and Ice-box Hardware, etc.
- 19, B Mechanics' Tools; Emery Grinders
- 19, C **SUNDRIES.** Ash, Cotton-waste and Garbage Receptacles; Automatic Door and Gate Openers; House and Garden Tools; Tree Sprays; Window Sash Ventilators; Window Box Ventilators, etc.

20. GLASS AND GLAZING, MIRRORS, GLASS TILE, ETC.

(Prism Glass for Pavement Lights, etc. see Section 15)

- 20, A Sheet Glass; Plate Glass, rough, ribbed, polished, figured; Ground Glass; Wire Glass; Skylight and Floorlight Glass; Glass Brick; Prismatic, Checquered, Chipped, Embossed, Etched, Cut, and Stippled Glass; Pressed Prism Glass; Table and Counter Tops; Dissecting Slabs; Plumbers' Slabs and Partitions, etc.; Glass Tile for all purposes
- 20, B Clear and Stained Cathedral Glass, hammered and smooth; Jewels and Special Products; Stained Glass Design and Workers; Art Glass Painting; Glass Mosaic; Leading, Comes; Commercial Painted Glass; Glass Signs
- 20, C Silvered and Composition Mirror Glass and Work

21. WOODWORK (Structural and Joinery)

(Wood Mantels see also Section 41)

- 21, A **TIMBER AND LUMBER**, Lath, Shingles, Veneers, Moldings; Wood-working Machinery and Tools; Turned Work; Flag Poles
- 21, B Wood Columns, Doors, Windows, all styles, and Sash; Outside Shutters; Flooring; Trim; Exterior Finish and Molded Work; Framed-up Cabinet Work, Fixtures, Stairs, Mantels; Machine-carved Room Moldings, Panels, Grille Work, Railings, Balustrades
- 21, C Revolving Doors; Swivel-action Balance Doors; Telephone Booths; Wood Rolling Doors, Partitions and Shutters; Rolling-door School Wardrobes; Inside Blinds, all kinds; Sundries
- 21, D **PARQUET FLOORING**; Parquetry; Wood Carpet, Wood-block Flooring, Steel-woven Flooring; Wood Mosaic, etc.
- 21, E Wall Board, of wood strip, wood pulp, compressed straw, paper, fiber, etc., and similar products; Asbestos Wood for joinery uses

Section
Number

- 21, F Weatherstrips in all Materials; Insect Window Screens and Doors; Screen Hardware; Storm Sash
- 21, G Show-window Equipment; Display Fixtures; Store Fixtures; Bar Fixtures; Bank and Office Cabinet Fixtures, Partitions, etc.

22. STORE FRONT CONSTRUCTION OF SPECIAL DESIGN

Store-front and Show-window Work, in wood and metal; Patent Bars, Glass Fasteners, etc.

23. HORTICULTURAL BUILDINGS AND EQUIPMENT

Greenhouses, Conservatories, Patent Systems of Construction; Heating and Ventilation Design; Special Boilers; Slate Benches; Sash-operating Devices, etc.

24. FLOOR, WALL AND CEILING TILE AND MOSAIC, AND SETTING

(Mantel Facings and Hearths see also Section 41)

(Glass Tile see Section 20)

(Rubber and Cork Tile see Section 25)

CERAMIC TILE, All Varieties, for walls, floors, mantels, etc., for utilitarian and decorative purposes; Sanitary Shapes; Faience Tile; Ceramic and Marble Mosaic; Venetian Granito Terrazzo Floors; Marble Tile

25. SPECIAL SANITARY FLOORING, WALL AND CEILING LINING, ETC.

Special Sanitary, Fireproof, Noiseless, Plastic Composition Floors; Walls, Ceilings, Sanitary Base, Trim, etc.; Interlocking Rubber Tiling, all kinds; Cork Tile Floors; Rubber and Cork Mats; Asbestos Composition Floors; Asphalt Floors; Asbestos Wood; Lining, etc.

26. COMPOSITION ROOFING, SHEATHING, FLOORING, PAVING AND INSULATING PRODUCTS

(Pipe and Boiler Covering see Section 28)

- 26, A Building and Insulating Paper, Tarred Roofing Felt, Natural Hair Felt, Quilt; Asphalt, Coal Tar Pitch; Cork; Asbestos Paper, Felt, Cement, etc.
- 26, B Asphalt and Gravel, Pitch, Slag, Plastic Slate, Asbestos, Actinolite and other Patent Composition Roofing; Ready Roofing of all varieties; Roofers' Cement; Protective Roof Coatings; Rock Asphalt Roofing; Flat-tile Roofing; Asbestos Shingles; Roofing Burlap
- 26, C Pavements and Flooring of Standard and Patent Cement Composition, Cement Tile, Asphalt Blocks, Rock Asphalt, Wood Blocks, Cork Paving Brick, etc., for sidewalks, streets, stables, breweries, warehouses, courtyards, etc.
- 26, D INSULATING AND DEAFENING MATERIALS, against heat, cold, sound, and dampness; Papers, Cements and Mastics, Felts and Quilts, of asbestos, hair, fiber, etc.; Mineral Wool; Cork Insulation, board, blocks, granular

Section
Number

27. ROOFING SLATE AND STRUCTURAL SLATE. SOAPSTONE PRODUCTS

- 27, A Standard and Special Roofing Slate, all sizes and shapes
- 27, B Slate Stairs Work; Flooring Slabs and Tile, Wainscoting, Toilet-room Partitions, etc.; Building Work; Sills, Lintels, Hearths, etc.; Switchboards, Panelboards; Blackboards, natural slate and composition; Mausoleum Work; Dissecting and Operating Slabs; Tanks; Laboratory Tables; Plumbers' Slate Work; Marbleized Slate Mantels and Wainscoting, etc.
- 27, C Soapstone Register Borders, Linings, Slabs, Stair Treads, Table Tops, Sundries; Plumbers' Soapstone Work; Switchboards, Panelboards

28. STEAM POWER-PLANT MACHINERY AND SPECIALTIES, FOR GENERAL PURPOSES AND HIGH-PRESSURE HEATING. HYDRAULIC AND PNEUMATIC ENGINES AND FITTINGS

- 28, A **HIGH-PRESSURE STEAM BOILERS**, horizontal-tubular, vertical-tubular and water-tube Types; Fire-box Boilers; Coal, Artificial Gas, Natural Gas and Petroleum Firing Furnaces; Feed-water Heaters; Boiler Pumps, Pump Governors, Water Softeners and Scale Removers and General Power-plant Equipment
Special Boiler Grates; Grate Blowers; Mechanical Stokers; Forced-draft and Superheated-steam Devices; Automatic Smokeless Furnaces; Boiler Breeching; Smoke Stacks, etc.
- 28, B **STEAM ENGINES AND PUMPS**, of all kinds and for all purposes; Sewage Pumps; Steam Turbine; Steam Drills and Similar Tools; Traveling and Stationary Cranes; Condensers, Compressors; Iron Tanks, for storage, suction, air and water compression, blow-off, etc.
Gears, Shafting and Hangers, Pulleys, Corundum Wheels; Rope Transmission; Pressure Hose; Transmission Rope; Engine Belting
- 28, C Valves, Steam Traps, Steam and Oil Separators; Oil Filters; Automatic Oilers; Injectors; Measuring and Regulating Instruments; Duplex Regulators; Exhaust Heads; Patent Steam Specialties; Pipe and Piping Details; Pipe Bending, Welded Outlets and Joints; Packing
- 28, D **PIPE AND BOILER COVERING (Heat Insulating)**. Magnesia-asbestos and Other Composition Cement Plastic Coverings; Wood, Magnesia-asbestos and other Sectional Coverings of all kinds, for steam pipes, boilers, hot-water pipes and tanks, etc.
(Cold Insulating). Plastic and Sectional Coverings of Asbestos Composition, Cork, etc., for Refrigeration Work; Ammonia Pipes, Brine Tanks, Cold Water Supply Pipes and Tanks, etc.
- 28, E **HYDRAULIC ENGINES**. Apparatus and Fittings; Hydraulic Engineering; Water Motors and Wheels; Turbines; Hydraulic Rams, etc.
- 28, F **PNEUMATIC ENGINES**. Apparatus and Fittings; Pneumatic Engineering; Compressed-air Motors; Air Pumps; Air Compressors; Sand-blast Tools; Sewage Ejectors; Pneumatic Hoists, Cranes, Drills, Riveters, etc.

Section
NumberSection
Number**29. HEATING AND VENTILATING (Steam, Hot Water, Warm Air)**

(High-pressure Boilers see Section 28)
(Pipe and Boiler Covering see Section 28)
(Registers for Heating and Ventilation see Section 15)

29, A HIGH-PRESSURE STEAM HEATING AND VENTILATING ENGINEERING. Radiator and Coil Systems of Heating, all plans; Pressure-reducing Valves; Circulation Devices; Vacuum and Vapor Heating Systems; Hot-blast Systems of Factory Heating Chamber-blower Systems of Heating and Ventilation Air Filtration, Tempering and Humidifying Apparatus; Grain Driers; Power Fans, all designs; Sheet-iron Ducts, Chambers, etc.

29, B LOW-PRESSURE STEAM AND HOT-WATER HEATING. Boilers of all designs; Coal, Artificial Gas, Natural Gas and Petroleum Firing; Garbage-burning Heaters, steam and water; Detail Equipment for Standard Systems; Direct, Indirect and Direct-indirect Design; Hot-water Circulators; Expansion Tanks

29, C RADIATORS. General and Special Coil and Pin Radiators; Wall Radiators; Pressed-steel Radiators; Patent Radiator Boxes; Regular and Special Radiator Valves; Air Valves; Gas-steam Radiator Heaters; Automatic Temperature Regulating Systems; Damper Regulators; Boiler and Radiator Thermostats

29, D WARM-AIR FURNACE HEATING. Furnaces of all designs, portable and brick-set; Coal, Artificial Gas, Natural Gas and Petroleum Firing; Combination Warm-air and Steam Furnaces; Piping, Register Boxes, etc.; Automatic Damper Regulators; Base-burner Stoves; Standard Heating Stoves

30. ELECTRIC APPARATUS AND EQUIPMENT FOR LIGHT, POWER, HEATING AND COOKING

(Lighting Fixtures, Lamps, etc. see Section 42)
(Underground Conduits see Sections 7 and 8)

30, A GENERATORS of all designs; Belt-driven and Direct-connected Outfits; Turbine Machines; Gasoline-engine Sets; Accumulators, Transformers, Controllers, Storage Batteries; Storage Battery Lighting Systems

30, B COPPER WIRE AND CABLE; Switches; Switchboards; Regulating and Measuring Instruments; Protective Devices; Interior Wiring Details; Receptacles, Cutouts, Fuses, Contact Plugs, Moldings, Insulators
Interior Conduits, metal, cement-lined pipe, flexible fiber, etc.; Conduit Fittings; Distribution Panels and Cabinets; General Electric Light and Power Engineering

30, C LAMPS, Arc and Incandescent of every kind; Sockets; Fixtures; Detail Exterior Wiring Equipment, poles, brackets, pulleys, etc.; Vacuum-tube Lighting, etc.

30, D Motors, of all designs and for all purposes; Motor Instruments; Electric Water and Sewage Pumps; Electric Air Compressors; Searchlights; Electric Fans; Electric Power Tools and Apparatus for all purposes

30, E Electric Heating and Cooking Apparatus, and other Domestic Electric Appliances

31. GAS AND OIL ENGINES AND APPARATUS FOR LIGHT, POWER, HEATING AND COOKING

(Electric Light Apparatus, etc. see Section 30)
(Lighting Fixtures, Lamps and Burners see Section 42)

31, A Standard Illuminating-gas, Special-apparatus Light Systems; Acetylene-gas Machines; Calcium Carbide; Pintsch-gas Light, Blau-gas Light, and other Patent Illuminating-gas Systems; Gasoline Lighting Machines; Producer-gas Apparatus; Piping, Valves and Installation Details; Meters; Gas-saving Appliances

31, B Gas Heating and Cooking Apparatus; Radiators; Acetylene, Gasoline and Oil Stoves, all kinds, and other Domestic and Industrial Gas Appliances; Natural Gas Equipment and Appliances

31, C Internal Combustion Gas and Oil Engines, for electric lighting, pumping and other purposes; Alcohol, Distillate, Gasoline, Naphtha, Petroleum and Producer-gas Engines; Hot-air Engines, for pumping, etc.

32. MECHANICAL REFRIGERATION, ICE-MAKING, REFRIGERATORS

(For Insulating Materials see Section 26 D)

(For Cold-pipe and Tank Covering see Section 28D)

32, A AMMONIA MACHINES and other types, for Cold-storage Installation and Ice-making Plants; Refrigerating Apparatus and Installation, for hotels, institutions, stores, residences

Drinking Water Cooling and Circulating Plants; Valves and Fittings; Cold-storage Doors and Windows; Abattoir Doors; Ice Chutes, Recording Doors, etc.; Construction of Buildings and Rooms and Insulation Work in connection, for buildings, pipes and tanks, etc.

32, B PORTABLE REFRIGERATORS (Ice Boxes), all styles of construction; Refrigerator Showcases and Store Fixtures; Ice-box Refrigerating Installations, for hotels, institutions, etc.

33. PASSENGER AND FREIGHT ELEVATORS, ESCALATORS, DUMBWAITERS, OVERHEAD INTERIOR CONVEYORS, CHUTES, MECHANICAL APPARATUS

(Cars, Doors, Enclosures see also Section 15)

(Patent Protective Doors and Gates see Section 17)

(Heavy Conveyors see Sections 3 and 28)

33, A POWER PASSENGER AND FREIGHT ELEVATORS, steam, gas-machine, hydraulic-cylinder, steam-hydraulic, pneumatic, plunger-type and electric; Hand Passenger and Freight Machines; Invalid Lifts; Carriage and Automobile Lifts; Cars, Doors, Platforms, Equipment Details; Elevator Pumps; Hemp Rope; Hydraulic Accumulators; Air-cushion Safety

33, B ESCALATORS, Inclined Elevators, Moving Stairways, for passengers and freight; Inclined Railways

DUMBWAITERS, all standard makes; Revolving; Brass-tube Restaurant; Trunk Lifts; Ash Hoists; Kitchen Elevators; Book Lifts; Wood Cars; Steel Cars

Section
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33, C Interior Conveyors, for stores, warehouses, factories, machine shops, barns, etc.; Tray and Bucket Elevators; Industrial Tramways and Telferage Systems; Stationary Sliding Ladders; Electric and Pneumatic-tube Cash and Parcel Systems, etc.; Parcel, Package and Merchandise Chutes; Turnstiles; Industrial Cars; Platform and Store Scales, etc.

33, D Sundry Mechanical Apparatus and Equipment

34. SIGNAL SYSTEMS, TELEPHONES, BELLS AND CHIMES, CLOCKS, ORGANS

34, A Electric and Pneumatic Bell Installation and Burglar Alarms; Bank, Store and Warehouse Protective Systems; Electric Signal Systems, for elevators, hotel service, offices, etc.; Telephone Systems, for hotels, offices, etc.; Apparatus, Annunciators, Switchboards, Electric Door Openers

Speaking Tubes; Dictograph Telephone System; Teleseme Signal Systems; Express Call Systems; Fire Alarm Apparatus; Electric Signs; Dry and Wet Cells; Multiple-service Battery Sets

34, B Tower Bells and Chimes; Westminster Clock Chimes

34, C Clocks, for buildings; Pneumatic and Electric Clock Systems; Program and Secondary Clocks; Tower Clocks; Sun Dials, tower, pedestal; Clock Dials, wood, iron, glass

34, D Organs, for church and auditorium; Hydraulic and Electric Organ Blower Motors

35. PLUMBING, HOT AND COLD WATER SUPPLY, DRAINAGE AND SANITATION

(Cast-iron Water and Drainage Pipe see also Section 15C)

(Electric Sump and Sewage Ejectors see Section 30D)

(Pneumatic Sump and Sewage Ejectors see Section 28F)

(Steam Water Pumps and Sewage Pumps see Section 28B)

35, A WATERPIPE AND FITTINGS. Iron, Lead, Lead-lined, Tin-lined, Block-tin, Brass, Nickel-plated, Solid White-metal, White-metal Steel-lined, Copper, Brass and Aluminum Pipe; Pipe Fittings and Fixtures; Faucets, Bibbs, Cocks, Valves, all styles and finishes

Pressure Regulators; Water Meters; Hydrants; Shower-bath Equipments; Patent Supply and Waste Devices; Flush Tanks and Valves

35, B PLUMBING FIXTURES. Solid-porcelain, Vitreous-china, Enameled-iron, Enameled-steel, etc., Fixtures; Planished Copper Baths and Sinks; Crockery, Reinforced-concrete, Cement-cast, Slate and Soapstone Sinks and Washtubs

Water-closet Seats; Bathroom Accessory Fittings; Bath Cabinets; Bar Fixture Specialties; Therapeutic Fixtures; Plumbers' Marble, Slate, Soapstone, Composition, Glass Work, for lavatories, floor plates, stalls, partitions, etc.

Flush-tank Piping, Fixtures; Fixture Legs and Brackets; Water-closet Seat Hinges; Sink Backs; Washtub Covers, Drain Boards, etc.

35, C HOT WATER SUPPLY. Kitchen Circulating Boilers, copper and galvanized-iron; Special-design Kitchen Boilers; Instantaneous-gas Water Heaters and Attachments; Coal-boiler and Storage Tank Hot-water Heaters

Steam-coil and Steam-tube Direct and Combination Tank Heaters; Combination Storage-tank and Kitchen Boiler Systems; Automatic Attachments; Thermostats

35, D DRAINAGE WORK. Cast-iron, Wrought-iron, Lead and Brass Pipe and Fittings, for soil, waste, vent, roof, and ground-drainage work; Traps; Gutters and Leaders; Cesspools; Catch-basins; Fresh-air Valves; Cellar Drainers; Special Stable, Abattoir and Garage Drains and Cesspools (Catch-basins)

35, E Sanitary Design and Apparatus; Inodorous Evacuators; Garbage Incinerators and Destructors; Hospital Disinfecting Apparatus; Portable Fumigators; Clothing and Bedding Disinfectors; Sterilizers; Special Suburban Drainage Systems; Chemical Disposal Works

35, F WATER SUPPLY. Water Tanks and Vats, wood and iron; Water Towers; Hand Pumps, Chain Bucket Pumps; Electric, Gas, Gasoline, Hot Air Pumps, Windmills; Artesian Wells; Water Lifts; Deep-well Working Heads; Hydraulic Rams; Pneumatic Outfits; Independent Water Supply Systems; Wood Mains

35, G Water Filtration and Aeration; Plants, and Portable-connected Filters; Alum Attachments; Water Stills; Water Softeners

36. KITCHEN AND LAUNDRY EQUIPMENT

36, A KITCHEN RANGES, Coal, Gas, Electric, all styles; Broilers, Patent Ovens; Steam-cooking and Warming Tables; Dishwashers; Hot-plates; Detail Equipment, Vessels and Implements; Electrical Appliances; Tile Bakers' Ovens (patent construction); Brick Bakers' Ovens

36, B LAUNDRY MACHINERY OUTFITS. Washers, Wringers, Ironers, Ironing Boards, Mangles, Drying Closets, Portable Dryers, etc.; Laundry Stoves; Sad-iron Heaters; Starch Boilers; Electrical Appliances

37. STABLE AND ABATTOIR FITTINGS AND GARAGE EQUIPMENT

(Drainage Work see Section 35)

Stalls, Mangers, Hay Racks, Troughs, Harness Brackets, Feed Chutes and Boxes, Special Sinks, Feed Bins; Patent Stall Floors; Stable Pavement; Special Stable Windows and Doors; Hardware for Stables; Hoists, etc.

Carriage Washers; Automobile and Carriage Turntables; Gasoline-storage Systems, Pumps, Valves, Hose, Measuring and Distributing Devices; Abattoir Specialties

38. VACUUM CLEANING APPARATUS

Stationary Machines, all designs; Portable Apparatus; Piping, Detail Equipment, Cleaning Tools

Section
NumberSection
Number**39. PAINT, VARNISH, COLORS**

(Technical Paints and Preservative Coatings see Section 5)

- 39, A **MATERIALS.** Lead, Zinc, Graphite, Litharge, Oxide of Iron; Linseed Oil, Gums, Turpentine; Colors, metallic and mineral, dry and ground in oil; Mortar Colors; Water Colors; Wax
- 39, B **READY-MIXED LEAD AND ZINC PAINTS**, for House, Roof, Marine Work, Iron Work, Exterior Walls, etc.; Enamel Paints, Red Lead Paint, Metal Powder Lacquers, Rubber Paint, etc.
- 39, C **FILLERS, HARD-OIL FINISH AND VARNISHES** of all kinds, for natural finish or rubbed cabinet work; Shellac, Japans, Dryers, Exterior Varnishes; Stains or Dyes for Interior Wood Work, acid, water, oil; Roof-shingle Stains; Floor Polishes and Wax
- 39, D **Flat and Gloss Wall Finish; Cold Water Paint**, for exterior use; Special Calcimines, for interior use; Wall Size
- 39, E **Mechanical Painting Apparatus** (Spraying Machines, for paint, calcimine, whitewash)

40. METAL FURNITURE AND FITTINGS, SAFES AND VAULTS, MAIL CHUTES

- 40, A **Office and Bank Furniture; Filing Cabinets; Tables, Chairs, etc.; Warehouse and Store Shelving, Racks, etc.; Clothes Lockers, Wardrobes, etc.; Hospital and Laboratory Furniture and Fittings; Library Furniture; Stacks, and Shelving; Garden Furniture; Medicine Cabinets**
- 40, B **Bank and Office Safes, Bank Vaults, Vault Doors; Wall Safes; Cabinet Safes; Safe Deposit Boxes, etc.**
- 40, C **MAIL CHUTES**, all designs, and Boxes

41. FIREPLACE MANTELS AND EQUIPMENT

(Architectural Faience Mantels see also Section 8)

(Stone and Marble Mantels, natural and artificial, see also Sections 9 and 10)

(Marbleized Slate Mantels see also Section 27B)

(Wood Mantels see also Section 21)

MANTELS, all materials and designs; Coal Grates, Ventilating Grates, Coal and Wood Baskets, Fenders; Andirons, Tools; Metal Fire Screens; Asbestos Gas Curtains; Gas Logs; Gas and Electric Reflector Grates; Combination Steam Grates

Baltimore Fireplace Heaters; Patent Iron Throats

and Dampers; Smoke Curtains, etc.; Facings and Hearths of Tiling, Marble, etc.; Bronze and Cast-iron Fireplace Linings

42. LIGHTING FIXTURES AND INTERIOR ILLUMINATION DESIGN

(Electric Lamps see Section 30)

GAS, ELECTRIC AND COMBINATION FIXTURES. All Materials, Acetylene, Gasoline-gas, Natural-gas and Naphtha Lamps and Burners; Globes, Shades, Diffusers, Reflectors; Concealed Lighting for Interiors, Show Windows, Picture Galleries, etc.; Stage Lighting, Dimmers, etc.; Illumination Design

43. FURNITURE AND FINE FIXTURES, FURNISHINGS, DECORATION, DECORATIVE WORK AND ORNAMENT

(Metal Furniture and Specialties see Section 40)

- 43, A **Domestic, Office, Bank, Library, Theater, Factory, Hospital, Asylum, Court, Hotel, Restaurant and Saloon Furniture and Fine Fixtures; Collapsible, Knocked-down and Combination Furniture; Announcement Boards; Antiques; Upholstery; Bedding; Awnings; Tents; Ceramics; Bronzes; Table Ware, Linen, Cutlery and Similar Furnishings**
- 43, B **Church Seating; Altars, Fonts, Furniture, Lecterns, Vessels, etc.; Theater and School Seating**
- 43, C **Draperies and Curtains of all materials; Carpets and Rugs; Mats; Window Shades; Venetian Blinds; Wall Papers; Leather, Textile and Special Fabric Coverings and Tapestries, for walls and ceilings; Linoleum; Oil Cloth**
- 43, D **Frescoing; Mural Painting; Marble and Glass Mosaic; Memorial Windows; Glass Painting; Sculptural Work, in all materials; Art Metal Work; Art Faience**
- 43, E **Architectural and Ornamental Work in Plaster and Composition; Decorative Work, in all materials; Antiques; Carving in Wood and Fine Metals; Stone Carving; Ivory Carving; Cameo and Intaglio Work, etc.; Architectural Modeling**

44. GYMNASIUM APPARATUS AND GAMES

General Athletic Apparatus and Detail Equipment; Playground Gymnastic Apparatus; Billiard and Pool Tables; Bowling Alleys, Tennis and Squash Courts, etc.; Gymnasium Design

CLASSIFICATION PAGE OF
SECTION 1

Architects' and Engineers' Office Supplies

Section Synopsis

Drawing Materials; Drawing Instruments; ing Cabinets, Tools, etc.; Blue Printing Equip-
Surveying Instruments; Drawing Tables, Draw- ment

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX				
1	Blue-printing equipment and paper			
2	Drawing and tracing papers			
3	Drawing tables, boards, tools, etc.			
4	Drawing instruments			
5	Drawing cabinets			
6	Colors, brushes, pencils, etc.			
7	Surveying instruments			
TRADE NAMES AND BRANDS				
"Peerless," drawing tables				
"Richter," drawing instruments				
} Catalog 1				

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers			
		1 to 4	5 to 8	9 to 12	13 to 16
					</

Manufacturers without Catalog data	Sub-Index Numbers				Manufacturers without Catalog data	Sub-Index Numbers				Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 4	5 to 8	9 to 12	13 to 16		1 to 4	5 to 8	9 to 12	13 to 16		1 to 4	5 to 8	9 to 12	13 to 16
American Draughting Furni- ture Co. Rochester, N. Y.	3				Hardtmuth, L. & C..... New York, N. Y.		6			Pease Co., C. F..... Chicago, Ill.	1 3 4	6		
Beckman Co., L..... Toledo, Ohio	1 2 3 4	5 6 7			Indianapolis Blue Print & Supply Co. Indianapolis, Ind.	1				Post Co., Frederick..... Chicago, Ill.	1 2 3 4	5 6 7		
Berger & Sons, C. L..... Boston, Mass.		7			Keuffel & Esser Co..... Hoboken, N. J.	1 2 3 4	5 6 7			Queen & Co..... Philadelphia, Pa.	4	7		
Buckeye Engine Co..... Salem, Ohio	1				Kolesch & Co..... New York, N. Y.	1 2 3 4	5 6 7			Soltmann, E. G..... New York, N. Y.	1 2 3 4	5 6 7		
Buffalo Blue Print Co..... Buffalo, N. Y.	1 2 3 4	5 6 7			Kopp & Co., Geo. L..... Pittsburgh, Pa.	1 2 3 4	5 6 7			Technical Supply Co..... Scranton, Pa.	1 2 3 4	5 6 7		
Chemical Paper Co..... Holyoke, Mass.	2				Kurtz, Laughlin & Swartz... Pittsburgh, Pa.	2 3 4	6			Wagenhorst & Co., J. H.... Youngstown, Ohio	1			
Commercial Blue Print Co... Detroit, Mich.	1				Lieber & Co., H..... Indianapolis, Ind.	1 2 3 4	6			Weber & Co., F..... Philadelphia, Pa.	1 2 3 4	5 6 7		
Commercial Photo Co..... Newark, N. J.	1				Makepeace, V. L..... Boston, Mass.	1 2 3 4	5 6 7			Williams, Brown & Earle... Philadelphia, Pa.	1 2 3 4	5 6 7		
Dietzgen, Eugene..... Chicago, Ill.	1 2 3 4	5 6 7			New York Blue Print Co.... New York, N. Y.	1 2 3				Wright Land Level Co..... Cane Springs, Ga.		7		
Economy Drawing Table Co. Toledo, Ohio	3													
Engineering Agency, Inc.. Chicago, Ill.	1 2 3 4	5 6 7												

B. K. Elliott Company

Drafting-Room Supplies and Surveying Instruments

GENERAL OFFICE: 108 SIXTH STREET
 PITTSBURGH, PA.

PRODUCTS—DRAWING MATERIALS AND INSTRUMENTS, FURNITURE AND EQUIPMENT for Drawing and Drafting Rooms, SURVEYING INSTRUMENTS, BLUEPRINT PAPERS AND BLUEPRINT MACHINES

ELLIOTT ENGINEER'S TRANSIT No. 1008—As shown; is the highest-grade instrument suitable for City, County, Mining and Bridge Engineers; has 11½-inch telescope, power 24 diameters, level on telescope, horizontal limb 6¼ inches, reading to minutes and graduated on solid silver, double verniers, arc 7-inch diameter and graduated on solid silver, compass needle 4½ inches long, standards cloth-finished, split-leg tripod, mahogany case.

Special Net Price, \$200.00.

Above, standards finished like instrument, \$205.00.

Adjustable instead of split-leg tripod, extra \$5.00.

Transit weighs 20 lbs., tripod 13 lbs.



No. 1008



No. 1010

ELLIOTT WYE LEVEL No. 1010—As shown; telescope 18 inches long, magnifying power 34 diameters, spirit level 8 inches long and sensitive. Is a very strong and well-built level. Split-leg tripod, mahogany case.

Special Net Price, \$100.00.

RECONNOISSANCE TRANSIT No. 1011—As shown; has 9-inch telescope, power 16 diameters, level on telescope, horizontal limb 5 inches in diameter, one double vernier reading to minutes, 3½-inch vertical circle with one double vernier reading to 5 minutes, compass needle 3½ inches long, adjustable tripod, neat wooden case.

Special Net Price, \$110.00.

Weight with tripod of No. 1011 Transit, 15 lbs.

ELLIOTT BUILDERS' TRANSIT No. 1012—As shown; has 9-inch telescope, power 15 diameters, level on telescope, horizontal limb 5 inches in diameter and has one double vernier reading to minutes, tripod solid leg, with neat wooden case.

Special Net Price, \$75.00.

Transit and tripod weighs 13 lbs.



No. 1011



No. 1012

ELLIOTT BUILDERS' LEVEL No. 1013—As shown; has 12-inch telescope, magnifying power 24 diameters, spirit level 6 inches, solid-leg tripod, very well made.

Special Net Price, \$40.00.

Level and tripod weighs 13½ lbs.



No. 1013

"PEERLESS" DRAWING TABLE No. 1—As shown; with pine top 39 x 84 inches, two small drawers 21 x 24 inches inside, and six large drawers 32 x 44 x 2 inches inside.

Crated for shipment.

Special Net Price, \$40.00.



No. 1

"PEERLESS" DRAWING TABLE No. 8—As shown; with pine top 33 x 60 inches, five small drawers 13 x 24 x 3½ inches inside, and one large drawer 26 x 38 x 2 inches inside.

Crated for shipment.

Special Net Price, \$25.00.



No. 8

"PEERLESS" SECTIONAL FILING CABINET—As shown; is a 2-section cabinet, each section containing six drawers 26 x 38 x 2 inches inside and loose cap, with stock drawer 26 x 38 x 4 inches inside.

Crated for shipment.

Special Net Price, \$45.00.

Note — "Peerless" Sectional Filing Cabinets can be furnished in any size desired from stock, or to order.



SET OF GENUINE "RICHTER" DRAWING INSTRUMENTS No. 2001—As shown; illustration is about 1¼ size, in morocco case, silk-velvet lined. These instruments are first-class in design and construction, and very highly finished.

Special Net Price, \$15.00. ●



No. 2001

ELECTRIC BLUEPRINTING DEPARTMENT—This department is equipped to handle the largest orders and to guarantee quick delivery and best class of work. Write for our prices, regardless of distance from us. Our blueprint papers are the market standard.

Send for our illustrated Catalog "A" giving prices and details on our complete line.

CLASSIFICATION PAGE OF
SECTION 2

**Architects, Engineers, General Contractors,
Building Specialists, Publication**

Section Synopsis

A. Designing and Contracting Architects; Publication Plans and Specifications; Stock-Design and Specially-Designed Ready-made Houses, Bungalows, Garages, etc.; Portable Steel and Wood Houses, Booths, etc.; Landscape Architects, Gardeners, Contractors

Architectural Engineers; Analytical, Inspecting and Testing Engineers; Experimental Laboratories; Designing and Contracting; Acoustic, Civil, Mechanical, Electrical and Sanitary Engineers;

Heating and Ventilating Engineers; Reinforced Concrete Specialists; Vault Engineers; Consulting Engineers

B. General Building Construction; Heavy Foundations and Caisson Work; Concrete and other Piling; Tall Chimneys; Bridges, Dams, Water Works and Similar Engineering Construction; Building Wreckers and Shorers

C. Photograph Publishers, Architectural Photographers; Architectural and Engineering Books and Magazines; Blue-printing Establishments; Photograph and Loose-leaf Binders

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX REGULAR CLASSIFICATION		
A	1	Architects, <i>designing and contracting specialists</i> Engineers, <i>designing, contracting:—</i>
	2	Acoustic
	3	Architectural
	4	Civil
	5	Electrical
	6	Fire-protection
	7	Power, heating and ventilating
	8	Mechanical
	9	Refrigeration and cold-storage
	10	Reinforced concrete
	11	Sanitary
	12	Vault design
	13	Engineers:— Analytical, inspecting and testing Consulting
	14	Experimental laboratories
	15	Landscape architects
	16	Landscape gardeners and contractors
	17	Portable steel houses, booths, garages, etc.
	18	Portable wood houses
	19	Publication, <i>plans and specifications</i>
	20	Stock-design and specially-designed ready-made houses, bungalows, etc.
	21	Testing machines and instruments
	B	35	Building wreckers and shorers
36		Civil engineering contractors, <i>bridges, dams, water works, etc.</i>
37		Concrete piling, <i>plain, reinforced</i>
38		General building contractors
39		Heavy foundations and caisson work
40		Tall brick chimneys
41		Wood piling

C	50	Architectural and engineering books and magazines
	51	Architectural photographers
	52	Blue-printing establishments
	53	Photograph publishers, <i>architectural</i>
	54	Photograph and loose-leaf binders

SPECIAL CLASSIFICATION					
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.					
	65	Garden furniture, <i>wood</i> (S. 43 A)			
	66	Plant tubs, boxes, etc., <i>wood</i> (S. 43 A)			

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 16	17 to 32	33 to 48	49 to 64	65 to 80
A 2	Bobbink & Atkins Rutherford, N. J.		17			65 66
C 1	Buchan Sales Co. Newark, N. J.				54	
A 1	Sutton, Frank New York, N. Y.	5 6 7 8 9 11 14				

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.	
Kaufman Heating & Engineering Co. S. 29 A, Cat. 1 (Heating and ventilating)	
Kellogg Co., The M. W. S. 8 A, Cat. 5 (Tall chimneys, radial brick)	
Turner Construction Co. S. 11, Cat. 2 (Reinforced concrete)	

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 16	17 to 32	33 to 48	49 to 64	65 to 80		1 to 16	17 to 32	33 to 48	49 to 64	65 to 80		1 to 16	17 to 32	33 to 48	49 to 64	65 to 80
American Diamond Blast Co. New York, N. Y.			36			Harry Bros. Co. Newport, Ky.		18									
Armour Institute of Tech- nology Chicago, Ill.	8 13 15					Harry Steel Co., O. K. St. Louis, Mo.		18				O'Rourke Engineering Con- struction Co. New York, N. Y.			36 37 39		
Atlantic Gulf & Pacific Co., New York, N. Y.			36			Hedden Construction Co. New York, N. Y.			38			Patzig & Son, August. Jersey City, N. J.		20			
Augustine, T. C. St. Joseph, Mo.			36			Heinicke, H. R., Inc. New York, N. Y.			40			Pattison Bros. New York, N. Y.	5 14				
Barstow & Co. New York, N. Y.	5					Hennebique Construction Co. New York, N. Y.	10		38			Penniman & Browne. Baltimore, Md.	13 15				
Blackall & Baldwin Co. New York, N. Y.	5					Hicks & Son, Isaac. Old Westbury, L. I., N. Y.		17				Pittsburgh Construction Co. Pittsburgh, Pa.			36 38		
Blodgett Construction Co. A. M. Kansas City, Mo.			36 37 38 39 41			Howes, Benjamin A. New York, N. Y.	10 11		38			Portable Construction Co. New York, N. Y.		18 21			
Booth, Garrett & Blair. Philadelphia, Pa.	13 15					Illinois Steel Bridge Co. Jacksonville, Ill.	10		36 37			Raymond Concrete Pile Co. New York, N. Y.	4 10		36 37		
Buffalo Testing Laboratory. Buffalo, N. Y.	4 13					Indianapolis Portable House Co. Indianapolis, Ind.		21				Reihle Bros., Testing Mach- ine Co. Philadelphia, Pa.		22			
Carlin Construction Co., P. J. New York, N. Y.			38			Industrial Engineering Co. . New York, N. Y.	10		38			Rheinfank House Wrecking Co. New York, N. Y.			35		
Champion Iron Co. Kenton, Ohio			36			Kansas City Bridge Co. Kansas City, Mo.	11		36 37 39 41			Scherzer Rolling Lift Bridge Co. Chicago, Ill.	4		36		
Cheseboro, Whitman Co. New York, N. Y.		21	38			Karr Portable House Co. Chicago, Ill.		18				Simplex Foundation Co. Philadelphia, Pa.			37		
Chicago House Wrecking Co. Chicago, Ill.			35			Kenwood Bridge Co. Chicago, Ill.			36			Snare & Trieste Co. New York, N. Y.			38		
Clark Co., C. Everett. Chicago, Ill.			38			Kidde, Walter. New York, N. Y.			38			Southard House Wrecking Co. New York, N. Y.			35		
Clynes Co. Newark, N. J.			35			Knapp Portable-Permanent Building System New York, N. Y.	18 21					Southern Ferro Concrete Co. Atlanta, Ga.	10		36 39		
Coletti Co., Stephen. New York, N. Y.			35 36			Lanquist & Illsley. Chicago, Ill.			38			Starrett Co., Theo. New York, N. Y.			38		
Columbian Steel Tank Co. Kansas City, Mo.	5	18				Leigh Valley Testing Lab- oratory Allentown, Pa.	13					Steers, Henry. New York, N. Y.			38		
Concrete Steel Co. New York, N. Y.	10					Lincoln, E. S. Brookline, Mass.	5 13 15					Stewart Co., James. New York, N. Y.			38		
Cullen-Friededt Co. Chicago, Ill.	10		36 37 38			Lucas & Sons, A. Peoria, Ill.	3					St. Louis Sampling & Test- ing Works St. Louis, Mo.	13 15				
Custodis Chimney Construc- tion Co., A. New York, N. Y.			40			Merttson & Morley Co. Saginaw, Mich.		21				Strauss Bascule Bridge Co. . Chicago, Ill.	4				
Dawson & Archer. New York, N. Y.			38			Mertz's Sons, George. Port Chester, N. Y.	1 4		36 38			Terry & Tench Co. New York, N. Y.			38		
Deeves & Bros., John H., Inc. New York, N. Y.			38			Metal Shelter Co. St. Paul, Minn.		18				Thompson-Starrett Co. New York, N. Y.			38		
Degnon Contracting Co. New York, N. Y.			38			Meyer Jr., Henry C. New York, N. Y.	8 14					Toledo Bridge & Crane Co. . Toledo, Ohio			36		
Eidlitz & Son, Marc. New York, N. Y.			38			Michelmann Steel Construc- tion Co. Quincy, Ill.	3 4 10		36 38			Trussed Concrete Steel Co. . Detroit, Mich.	10				
Electrical Testing Labora- ories, New York, N. Y.	13 15					Miller, Dayhall & Co. Brooklyn, N. Y.			35 36 37 39 41 45			Turner, C. A. P. Minneapolis, Minn.	10 13				
Ferro Concrete Construction Co. Cincinnati, Ohio	10		38			Miller, Dayhall & Co. Brooklyn, N. Y.			35 36 37 39 41 45			Union Bridge & Construc- tion Co. Kansas City, Mo.	4 10		36 37 39 41		
Fitzgerald & Bennie Labora- ories Niagara Falls, N. Y.	5 13 15					Merttson & Morley Co. Saginaw, Mich.		21				Unit Construction Co. St. Louis, Mo.	10				
Foundation Co. New York, N. Y.						Mertz's Sons, George. Port Chester, N. Y.			38			Walworth-English-Flett Co. Boston, Mass.	4 5 8				
Fountain & Choate. New York, N. Y.			38			Metal Shelter Co. St. Paul, Minn.		18				Weidemann, H. E. St. Louis, Mo.	13				
Fuller Construction Co. New York, N. Y.			38			Meyer Jr., Henry C. New York, N. Y.	8 14					Wells Bros. Co. New York, N. Y.			38		
Graner-Mahoney Contracting Co. St. Louis, Mo.	5					Michelmann Steel Construc- tion Co. Quincy, Ill.	3 4 10		36 38			Westerberg & Williams. New York, N. Y.		26			
Gray-Wimmer Co. St. Louis, Mo.			38			Miller, Dayhall & Co. Brooklyn, N. Y.			35 36 37 39 41 45			Whitney-Stein Co. New York, N. Y.			38		
Griggs and Holbrook. New York, N. Y.	5 7					Merttson & Morley Co. Saginaw, Mich.		21				Wills, Chas. T., Inc. New York, N. Y.			38		
						Mertz's Sons, George. Port Chester, N. Y.			38			White Co., J. G. New York, N. Y.			36		

Mem. Am. Soc. Mech. Engrs.
Assoc. Mem. Am. Inst. Elec. Engrs.

Frank Sutton
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UNION TRUST COMPANY BUILDING
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NEW YORK, N. Y.

Telephone 960-961 Rector,
Private Branch Exchange.

Designing and Supervising of Power, Heating and Ventilating Plants
Refrigeration, Electric Light and Power Installations
Sprinkler and Fire Protection Systems

Following is a list of some representative work on which I have been employed:

Lords-Court Building, 27 William Street, New York, N. Y.
Engineering Building, 114 Liberty Street, New York, N. Y.
Cushman Building, Broadway and Maiden Lane, New York, N. Y.
U. S. Rubber Building, New York, N. Y.
Great Northern Hotel, 56th & 57th Streets, New York, N. Y.
Garden City Hotel, L. I.
Hotel Phoenix, Buenos Ayres, Argentine, S. A.
American Bank Note Co. Building, New York, N. Y.
National Bank of Rochester, Rochester, N. Y.
Security Insurance Co. Building, New Haven, Conn.
Lancaster Trust Building, Lancaster, Pa.
Studio Building, West 67th Street, New York, N. Y.
New York Historical Society Building, New York, N. Y.
Pouch Gallery, Brooklyn, N. Y.
Harmonie Club House, 42d Street, New York, N. Y.
16 Carnegie Libraries, Brooklyn, N. Y.
Y. M. C. A. Buildings at Camden, Paterson and Elizabeth, N. J., and Bedford Branch, Brooklyn, N. Y.
St. Johns R. C. Chapel Buildings, Brooklyn, N. Y.
Puritan Church, Brooklyn, N. Y.
St. Peter's P. E. Church, 340 West 20th Street, New York, N. Y.
The Arlington Co. (Manufacturers of "Pyralin" Celluloid). Works, Arlington, N. J.
Hammerschlag Mfg. Co. (Manufacturers of Paper) Works, Garfield, N. J.
J. J. Lattemann Shoe Mfg. Co., Brooklyn, N. Y.
Strouse, Adler & Co. (Manufacturers of "CB" Corset), New Haven, Conn.
Franco-American Food Co., Jersey City Heights, N. J.
Hutchinson, Pierce & Co. (Star Shirt) Factory, Bridgeport, Conn.
Spencer Kellogg & Sons (Linseed Oil), New York & Buffalo, N. Y.
Bosch Magneto Co., Springfield, Mass.
Scott & Bowne (Cod Liver Oil), Watsessing, N. J.
Athenia Steel Co. Mills, Athenia, N. J.
Glamorgan Pipe & Foundry Co. (Cast Iron Pipe Foundry), Lynchburg and Radford, Va.
Keystone Leather Co., Philadelphia, Pa., and Camden, N. J.
Charles Pfizer & Co. Chemical Works, Brooklyn, N. Y.
Valentine & Co. Varnish Factory, Greenpoint, L. I.
National Coal Tar Co., Brooklyn Works

Essex County Hospital for the Insane, Overbrook, N. J.
Manhattan Eye, Ear and Throat Hospital, New York, N. Y.
Hospital, Steelton, Pa.
Isolation Hospital, Soho, N. J.
Metropolitan Hospital, New York, N. Y.
Cumberland Street Hospital, New York, N. Y.
City Hospital, New York, N. Y.
Children's Hospital, Randalls Island, N. Y.
Bellevue and Allied Hospitals of New York, N. Y.
Fordham, Gouverneur, Harlem Hospitals
Star and Garter Theater, Chicago, Ill.
Folly Theater, Brooklyn, N. Y.
Park Theater, Brooklyn, N. Y.
Star Theater, Brooklyn, N. Y.
Gaiety Theater, Pittsburgh, Pa.
High School, Orange, N. J.
Technical High School, Jersey City, N. J.
Public Schools at Jersey City, South Orange and Maplewood, N. J., and New Canaan, Conn.
Residence of I. D. Fletcher, 79th Street and 5th Avenue, New York, N. Y.
Residence of John D. Archbold, Tarrytown, N. Y.
Residence of Charles V. Paterno, New York, N. Y.
Cavalry and Artillery Barracks and Stables, U. S. Military Academy, West Point, N. Y.
U. S. Soldiers' Home, Washington, D. C.
Marion Branch of National Home for Disabled Volunteer Soldiers, Marion, Ind.
St. Luke's Home, New York, N. Y.
New York Catholic Protectory, Westchester, N. Y.
Sailors' Snug Harbor, Staten Island
39th Street Ferry Houses, Manhattan and Brooklyn Terminals, New York, N. Y.
Staten Island Ferry House, Manhattan Terminal, New York, N. Y.
American Dock Stores, Tompkinsville, Staten Island
Cunard Steamship Co., Piers 51-52 North River, New York, N. Y.
Scandinavian Line Pier, Hoboken, N. J.
22d Regiment Armory, N. G. S. N. Y., New York, N. Y.
Atlanta Terminal Station, Atlanta, Ga.
West 60th Street Public Bath, New York, N. Y.
Hahne Store, Newark, N. J.
Simpson, Crawford & Simpson Store, New York, N. Y.

A List of Architects and Others for whom I have worked furnished on application

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World's Choicest Nursery and Greenhouse Products

RUTHERFORD, N. J.

FACILITIES—We shall gladly give our time and attention to Architects visiting our Nursery, consisting of upward of 300 acres of highly cultivated land and 500,000 square feet of greenhouses and storehouses, in which we are growing Nursery and Greenhouse Products for every place and purpose, the best that experience, good cultivation and our excellent facilities can produce, placing us in a position to fill orders of any size. We shall be pleased to give special prices on planting lists.

EVERGREENS, CONIFERS AND PINES—More than 75 acres of our Nursery are planted with handsome specimens. Our plants are worth traveling any distance to see.

BOXWOOD AND BAY TREES—We have thousands of trees in many shapes and sizes.

DECIDUOUS TREES AND SHRUBS—Many acres of our Nursery are planted with several hundred thousand trees and shrubs. It is worth while to visit us and inspect them.

HARDY OLD-FASHIONED PLANTS—We have thousands of rare, new and old-fashioned kinds. Special prices on quantities.

ROSES—We grow several hundred thousand plants for Spring and Autumn delivery, in all the leading varieties which are described in our Illustrated General Catalogue.

LAWN GRASS SEED—Our Rutherford Park Lawn Mixture has given satisfaction everywhere.

RHODODENDRONS—Many thousands of acclimated plants in Hardy English and American Varieties are growing in our Nursery.

TRAINED, DWARF AND ORDINARY FRUIT TREES AND SMALL FRUITS—We grow these for all kinds of fruit orchards.

PALMS, DECORATIVE PLANTS—For conservatories, interior and exterior decoration.

OUR NEW GIANT FLOWERING MARSHMALLOW—An entirely new plant. Will grow and bloom everywhere.

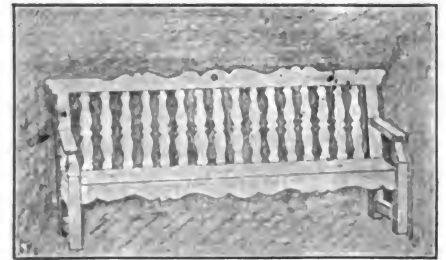
ENGLISH POT-GROWN GRAPE VINES—We have these in season for greenhouse cultivation.

BULBS AND ROOTS—We grow these for all kinds of gardens.

HARDY TRAILING AND CLIMBING VINES—We have them for every place and purpose. Ask for special list.



TREE TUB



GARDEN BENCH

PLANT TUBS, WINDOW BOXES AND ENGLISH GARDEN FURNITURE—We manufacture these in every style and size from architects' drawings. Our woodwork represents the highest perfection of woodworker's art. We also manufacture our regular line of PLANT TUBS, as described in our Illustrated General Catalogue. They are made of Heart Cypress, which is conceded to be the most durable wood for this purpose.

OUR ILLUSTRATED GENERAL CATALOG No. 77—This catalog gives the kind of information necessary to make up planting lists; also describes and gives prices of the above and all our other Nursery and Greenhouse Products. Mailed upon request.

WE PLANT EVERYWHERE FOR ARCHITECTS—We make a specialty of carrying out planting plans for Architects. We have the men and material to complete work of any size. We shall be glad to give prices and any other information desired on Landscape work.

VISITORS—Take Erie Railroad to Carlton Hill, second stop on Main Line; 3 minutes' walk to Nursery.



ROSE GARDEN PLANTED WITH OUR ROSES



PATH IN OUR NURSERY

Landscape Gardeners, Nurserymen, Florists and Planters.

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Patentees and Manufacturers of
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Factory and Salesroom
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NEWARK, N. J.

253 BROADWAY
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REG. TRADE MARK.

PRODUCTS—PHOTOGRAPH AND BLUE-PRINT BINDERS, MAGAZINE COVERS, TELEPHONE DIRECTORY COVERS, CATALOG COVERS, TRANSFER BINDERS and other Loose-Leaf Devices; also Leather Specialties.

DESCRIPTION—The Buchan Sales Company makes its Loose-Leaf Covers with spring Backs, Sectional Post Backs, etc., but its principal production is the celebrated Buchan Patented Metal Back Binder, so constructed that a single binder may hold one sheet or one hundred sheets securely; the only binder on the market that will do this without necessitating the punching of holes in the sheets.

The Buchan covers are constructed of the usual book-binders' board and imitation leather or canvas, or of solid flexible leather—the last word in loose-leaf covers. These solid flexible leather covers are not affected by moist climates and are being used by firms sending handsome catalogs to tropical countries. The sheets are confined by pressure exerted by screws which may be loosened or tightened by using an ordinary coin as a screw driver.

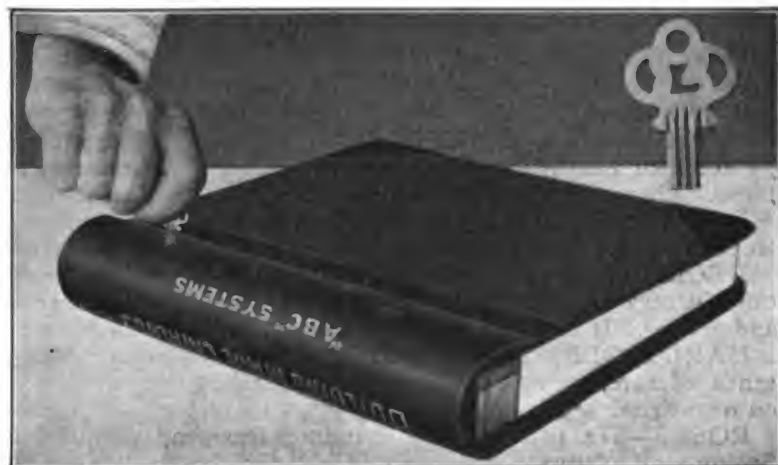


TELEPHONE DIRECTORY BINDER

For the purpose of protection, they may be made with the Buchan Private Lock Screw, which prevents the removal or insertion of pages or magazines without a key. These binders are made in all sizes and are invaluable for filing maps, photos or blue-prints.

We will furnish full information as to the proper mounting of photographs, drawings, etc., so as to file them in the Buchan Binders. A hand punch will be furnished at nominal cost so any one can make the holes in the sheets to be inserted.

ADVANTAGES—Buchan binders are supplanting the method of rolling up architectural drawings, tracings, etc., because they eliminate the usual tearing of the sheets on being unrolled. This new loose-leaf system of preserving original tracings, specifications, etc., in book form has been satisfactorily employed in large architects' and engineers' offices where the vast amount of filing



ASSOCIATED BUILDERS CATALOG BINDER

is so extensive that it would require a greater space, to accommodate the old inconvenient system.

REFERENCES—This Associated Builders Catalog is a very good demonstration of our Loose-Leaf Locking Binders. Over 8,000 of these Catalogs are distributed over the United States. We are prepared to execute large orders of this kind at short notice. Our Loose-Leaf and Catalog covers are also used by the following:

Commercial Photo Co.	American Telephone & Telegraph Co.
Western Electric Co.	Engineers Club.
N. Y. Telephone Co.	Society of Automobile Engineers.
American Car & Foundry Co.	Lackawanna Railroad.
General Electric Co.	Interstate Map Co.
N. Y. Public Library.	Home Pattern Co.
Congressional Library.	City Club of New York.
Y. M. C. A. Libraries.	Corporation Trust Company of New Jersey.



PHOTOGRAPH BINDER SHOWING THE METHOD OF INSERTING PAGES

"A.B.C." SYSTEMS

CLASSIFICATION PAGE OF

SECTION 3**Builders' Construction Equipment**

(Hydraulic and Pneumatic Engines and Tools see also Section 28)
(Electric Engines and Tools see also Section 30)

Section Synopsis

Scaffolding; Boom and Hand Derricks; Portable Boilers; Engines and Pumps; Wire Rope, Hemp Rope; Guy Anchors; Tackle; Tramways, Locomotives; Chain and Cable Hoists; Heavy Material Conveyors; Concrete and Mortar Mixers; Stucco Sprayers; Steam Shovels, Buckets; Stone Crushers, Carts, Tools, etc.; Hod and Material Elevators; Rock Drills, Blasting Materials; Steel Sheathpiling; Hand and Hydraulic Jacks, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX REGULAR CLASSIFICATION		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFER- ENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere ac- cording to their general line of business.
				1 to 10	11 to 20	21 to 30	31 to 40	41 to 50	
1	Blasting materials								
2	Boilers, power, <i>portable</i>								
3	Carts, barrows, tools, etc.								
4	Chain and cable hoists								
5	Concrete and mortar mixers								
6	Concrete distributing towers								
7	Derricks, <i>boom, sheer legs, etc.</i>								
8	Engines, <i>hoisting, steam, electric</i>								
9	Hand and hydraulic jacks								
10	Heavy material conveyors and buckets								
11	Hemp and manila rope								
12	Hod and material elevators, <i>brick, concrete, mortar, etc.</i>								
13	Ladders, <i>patent extension</i>								
14	Pumps, <i>rams, foundation work, sump</i>								
15	Pile drivers								
16	Portable forges								
17	Rock drills, <i>all kinds</i>								
18	Scaffolding, <i>patent, masons', painters'</i>								
19	Steam shovels, stone crushers								
20	Steel sheathpiling								
21	Stucco sprayers								
22	Tackle, <i>all purposes</i>								
23	Torches, <i>all varieties</i>								
24	Transmission rope								
25	Tramways, locomotives, traction engines, <i>industrial</i>								
26	Wire rope, guy anchors								
SPECIAL CLASSIFICATION									
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.									
41	Gasoline engines (S. 31 C)								
42	Overhead interior conveyors (S. 33 C)								
43	Steam engines, <i>general</i> (S. 28 B)								
TRADE NAMES AND BRANDS									
"Eureka," rope, Catalog 1									
"Weller-Made," hoisting and conveying machinery, S. 33 C, Catalog 1									
		1	Columbian Rope Co. Auburn, N. Y.		11	24			Brown Hoisting Machinery Co. S. 11 Cat. 1 (Hemp and Manila rope)
									Des Moines Bridge & Iron Co. S. 35 F, Cat. 4 (Derricks, cranes, ladders, etc.)
									Douglas, W. & B. S. 35 F, Cat. 2 (Pumps, all kinds)
									Hough Co., W. B. S. 11, Cat. 3 (Contractors' concrete machinery and equipment)
									Puritan Cordage Mills S. 19 A, Cat. 2 (Rope for all purposes)
		2	Milwaukee Concrete Mixer & Machinery Co. Milwaukee, Wis.	5 6 8	12			41 43	Thomas & Smith S. 35 F, Cat. 3 (Pumps, all kinds)
									Weller Manufacturing Co. S. 33 C, Cat. 1 (Hoisting and conveying apparatus)
									See also the catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
Abendroth & Root Mfg. Co., Newburgh, N. Y.	2 10					Burton Powder Co., Pittsburgh, Pa.	1					Crowell, J. G., Brooklyn, N. Y.		14			
Acme Road Machinery Co., Frankfort, N. Y.	2 3 10	17 19				Byers Machine Co., John F., Ravenna, Ohio	7 8	12	22			Curtis & Co., St. Louis, Mo.	4	14			42
Advance Pump & Compress- or Co., Battle Creek, Mich.		14				Byron Jackson Iron Works., San Francisco, Cal.		14				Danville Foundry & Ma- chine Co., Danville, Ill.			25		
Aetna Powder Co., Chicago, Ill.	1					Caldwell & Son Co., H. W., Chicago, Ill.	10					Davidson Company, M. T., New York, N. Y.		14			
Akron Cultivator Co., Akron, Ohio	3					Calumet Engineering Works, Harvey, Ill.	4				42	Dean Bros. Steam Pump Works Indianapolis, Ind.		14			
American Hoist & Derrick Co., St. Paul, Minn.	7 8	12 15				Cameron Steam Pump Works, A. S., New York, N. Y.		14				Deane Steam Pump Co., New York, N. Y.		14			
American Locomotive Co., New York, N. Y.			25			Cargill Mfg. Co., Columbus, Ohio	5					De Laval Steam Turbine Co., Trenton, N. J.	1 2 3 4 7 8 9	14 17 19 20	22 25		
American Mfg. Co., New York, N. Y.		11				Carl's Sons Co., Thomas., Pittsburgh, Pa.	7 8	15 19	26			Deming Co., Salem, Ohio		14			
American Skein & Foundry Co., Racine, Wis.	9					Carpenter & Co., George B., Chicago, Ill.	3 4 7 8 9	11 13 15 16	22 25 26			Denver Rock Drill & Ma- chinery Co., Denver, Colo.		17			
American Steam Pump Co., Battle Creek, Mich.		14				Carr Company, J. B., Troy, N. Y.		19				Detroit Hoist & Machine Co., Detroit, Mich.	4 8				
American Steel & Wire Co., Chicago, Ill.			26			Carthage Foundry & Ma- chine Co., Carthage, Mo.	7 8	19				DeWeese Co., P. M., Chillicothe, Ohio	9				
Ames Shovel & Tool Co., Boston, Mass.	3					Century Cement Machine Co., Rochester, N. Y.	5					Diamond Chain & Mfg. Co., Indianapolis, Ind.	4				
Anderson Tool & Supply Co., W. H., Detroit, Mich.	3	17				Channon Co., H., Chicago, Ill.		11				Dobbie Foundry & Machine Co., Niagara Falls, N. Y.	7	15	26		
Ashland Steel Range & Mfg. Co., Ashland, Ohio	5					Charter Gas Engine Co., Sterling, Ill.	8					Dow Pumping Engine Co., George E., San Francisco, Cal.		14			
Atkins & Co., E. C., Indianapolis, Ind.	3					Chattanooga Wheelbarrow Co., Chattanooga, Tenn.	3					Drake Engine Co., Grand Haven, Mich.	4 8				
Avery Stamping Co., Cleveland, Ohio	3 10					Chesebro-Whitman Co., New York, N. Y.		13				DuBois Iron Works., DuBois, Pa.		14			
Bagley & Sewell Co., Watertown, N. Y.		14				Chicago Builders' Specialties Co., Chicago, Ill.	3 5 7 8	12				Duff Mfg. Co., N. S. Pittsburg, Pa.	9				
Baker Mfg. Co., Evansville, Wis.	8					Chisholm & Moore Mfg. Co., Cleveland, Ohio	4					Dunn, James P., Cleveland, Ohio	4				
Barnes Mfg. Co., Mansfield, Ohio		14				Cleveland Block Co., N. W. Cleveland, Ohio			22			Duplex Mfg. Co., Superior, Wis.	7 9	14			
Bessemer Gas Engine Co., Grove City, Pa.	8				41	Cleveland Elbow Co., Cleveland, Ohio	7					Durable Wire Rope Co., Boston, Mass.			26		
Bethlehem Steel Co., So. Bethlehem, Pa.	8 9 10	14 17				Cleveland Rock Drill Co., Cleveland, Ohio		16 17				E. St. Louis Locomotive & Machine Shop Co., E. St. Louis, Ill.	2	17	25		
Blake & Knowles Steam Pump Works, New York, N. Y.		14				Clyde Iron Works., Duluth, Minn.	8	15				Edelmeyer & Morgan Hod Elevator Co., New York, N. Y.	2 4 8	12			
Bowser & Co., S. P., Ft. Wayne, Ind.		14				Cockburn Co., New York, N. Y.	3 5 10					Edson Mfg. Co., Boston, Mass.		14			
Broderick & Bascom Rope Co., St. Louis, Mo.	4 10	11 22 25 26				Cold Co., E. J., Baltimore, Md.	2 8 10	14				Edwards & Co., H. D., Detroit, Mich.			22		
Browning Engineering Co., Cleveland, Ohio	8	15 19				Columbia Machine Works & Malleable Iron Co., Brooklyn, N. Y.	8					Elite Mfg. Co., Ashland, Ohio	5 9	18			
Bryan Mfg. Co., Bryan, Ohio	3					Columbus Chain Co., Columbus, Ohio	4					Erie Pump & Engine Works., Erie, Pa.		14			
Buckeye Jack Mfg. Co., Alliance, Ohio	9					Columbus Steam Pump Works Co., Columbus, Ohio		14				Eureka Machine Co., Lansing, Mich.	5				
Buch's Sons Co., A., Elizabethtown, Pa.	3					Cummins Machine Co., New York, N. Y.	10		25		42	Evans & Co., C. H., San Francisco, Cal.		14			
Bucyrus Co., So. Milwaukee, Wis.		15 19				Cummins Concrete Machinery Co., Chicago, Ill.	8 9	19 25				Everstick Anchor Co., St. Louis, Mo.			26		
Buda Company, Chicago, Ill.	9											Fairbanks, Morse & Co., Chicago, Ill.	2 3 8 9	14 15 17	21 25		
Buffalo Concrete Mixer Co., Buffalo, N. Y.	8											Fairmont Mining Machinery Co., Fairmont, W. Va.	4	10	14		
Buffalo Forge Co., Buffalo, N. Y.	8	14 15															
Buffalo Steam Pump Co., Buffalo, N. Y.	8	14															
Burr Mfg. Co., Cleveland, Ohio		15	22														

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
Field Force Pump Co..... Elmira, N. Y.	8	14				Hoisting Machinery Co..... New York, N. Y.	4 7 8 10	15 19	25		42	Lidgerwood Mfg. Co..... New York, N. Y.	2 7 8	12 15			
Fisher Hydraulic Stone & Machinery Co. Mt. Gilead, Ohio	5					Holland Machine Co..... New York, N. Y.		14				Link-Belt Co..... Chicago, Ill.	4 7 10	12 15 16 19	25		42
Flint & Walling Mfg. Co..... Kendallville, Ind.		14				Hunt Co., C. W..... New York, N. Y.	4 8 10		25			Lipman Mfg. Co..... Beloit, Wis.		14			
Flory Mfg. Co., S..... Bangor, Me.	7 8	12 15				Hussey-Binns Shovel Co..... Pittsburgh, Pa.	3	19				Lobee Pump & Machinery Co. Buffalo, N. Y.		14			
Foos Gas Engine Co..... Springfield, Ohio	8					Hydraulic Press Mfg. Co..... Mount Gilead, Ohio	9	14				Lucas Pump Co..... Dayton, Ohio		14			
Foot Mfg. Co..... Nunda, N. Y.	5					Ideal Concrete Machinery Co. South Bend, Ind.	5					Luitweiler Pumping Engine Co. Rochester, N. Y.		14			
Fort Wayne Electric Works. Fort Wayne, Ind.		17				Indiana Air Pump Co..... Indianapolis, Ind.		14				Lunt Moss Co..... Boston, Mass.		14			
Foster Pump Works..... Brooklyn, N. Y.		14				Industrial Car Co..... West Park, Ohio			25		42	McDonald Mfg. Co., A. Y. Dubuque, Iowa		14			
Fox Bros. & Co..... New York, N. Y.	1 2 3 4 7 8 9	11 14 15 16	25 26			Ingersoll-Rand Co..... New York, N. Y.	1	14 15 16 17				McLauthlin Co., Geo. T. Boston, Mass.	8				
French Oil-Mill Machinery Co. Piqua, Ohio		14				Jackson & Son, J. S..... Bath, Me.	2					McMillan's Sons, W. H. New York, N. Y.	4		22		
Frevert Machinery Co..... New York, N. Y.	4 8					Jackson Mfg. Co..... Harrisburg, Pa.	3					McWhinnie Wheelbarrow Works Poughkeepsie, N. Y.	3				
Frick Co..... Waynesboro, Pa.	2 8					Jackson Shovel & Tool Co.. Montpelier, Ind.	3					Macomber-Whyte-Moon Co New York, N. Y.		11 22 26			
Friction Pulley & Machine Works Sandy Hill, N. Y.		14				Jeffrey Mfg. Co..... Columbus, Ohio	4 5 8 10	12 14 17 19	22 25		42	Marion-Osgood Co..... Marion, Ohio	8	19			
Frost Mfg. Co..... Galesburg, Ill.	2 8					Jones & Laughlin Steel Co.. Pittsburgh, Pa.		20				Maris Bros..... Philadelphia, Pa.	10				
Fulton Machine & Forging Co. Canal Fulton, Ohio	3	19				Joyce-Gridland Co..... Dayton, Ohio	9					Marsh-Capron Mfg. Co. Chicago, Ill.	3 5 8 9	12			
Gardner Governor Co..... Quincy, Ill.		14				Justice & Co., Philip S..... Philadelphia, Pa.	9					Marvin Electric Drill Co. Binghamton, N. Y.		17			
Goulds Mfg. Co..... Seneca Falls, N. Y.		14				Kent Machine Co..... Kent, Ohio	5					Mason & Co., Volney P. New York, N. Y.	8				
Great Western Mfg. Co..... Leavenworth, Kans.	7 10	15				Kewanee Water Supply Co.. Kewanee, Ill.		14				Mast, Foos & Co..... Springfield, Ohio		14			
Greaves Specialty Co..... New York, N. Y.		14				Keystone Driller Co..... Beaver Falls, Pa.		14 17				Mead-Morrison Mfg. Co. Cambridge, Mass.	8 10	15			
Haines Concrete Machinery Co. Washington, D. C.	5					Keystone National Powder Co. Emporium, Pa.	1					Meitz & Weiss..... New York, N. Y.	8	14			
Hall-Holmes Mfg. Co..... Jackson, Mich.	5					Kilbourne & Jacobs Mfg. Co.. Columbus, Ohio	3		25			Merriman Bros..... Boston, Mass.			22		
Harrington, Son & Co., Ed- win, Inc. Philadelphia, Pa.	4					Kingsford Foundry & Ma- chine Works Oswego, N. Y.	2	14				Meyer Co., Henry H.. Baltimore, Md.	1 2 3 4 5 7 8 9	11 12 14 16 17 19 20	22 25 26		
Harris Air Pump Co..... Indianapolis, Ind.		14				Klein & Son, Mathias Chicago, Ill.	2	17	26			Michigan Bolt & Nut Works Detroit, Mich.			26		
Harris Pump & Supply Co. Pittsburgh, Pa.		14				Klemm, E. R..... Chicago, Ill.	7 9					Mineral Ridge Mfg. Co.. Mineral Ridge, Ohio	8 10	14			
Harvey, H. H..... Boston, Mass.	1 2 3 4 5 7 8 9 10	11 12 16 17	26			Knickerbocker Co..... Jackson, Mich.	5					Moffatt Machinery Mfg Co Charlotte, N. C.		14	26		
Hayden-Corbett Chain Co.. Columbus, Ohio	4	19				Koehring Machine Co..... Milwaukee, Wis.	3 5					Monighan Machine Co Chicago, Ill.	5 8				
Hazard Mfg. Co..... Wilkes-Barre, Pa.			26			Laidlaw-Dunn-Gordon Co.. New York, N. Y.		14				Moore Co., Franklin Winsted, Conn.	4				42
Henderer's Sons, A. L..... Wilmington, Del.	9	14				Lake Shore Engine Works Marquette, Mich.	8	17				Morris Co., I. P. Philadelphia, Pa.	2				
Hill Machine Co..... Anderson, Ind.		14				Lane Mfg. Co..... Montpelier, Vt.	7 8					Mullen & Son, John Shamokin, Pa.		14			
Hobbs, Clinton E..... Boston, Mass.	4					Laughlin Co., Thomas..... Portland, Me.		14	22			Myers & Bros., F. E. Ashland, Ohio		14			
						LaVergne Pump Co..... Newark, N. J.			14								
						Lea Equipment Co..... New York, N. Y.			14								
						Leffell & Co., James..... Springfield, Ohio	2 8										
						Leschen & Sons Rope Co., A. St. Louis, Mo.			22 25 26								

Columbian Rope Company

Manufacturers of Cordage

N. Y. Office and Warehouse
62 SOUTH STREET

MILLS AND GENERAL OFFICE
AUBURN, N. Y.

Chicago Office and Warehouse
370 RIVER STREET

PRODUCTS—MANILA ROPE, SISAL ROPE, FLAX TWINES, JUTE TWINES, HEMP TWINES

EUREKA ROPE—This is a brand second only to Columbian and made in the same careful manner.

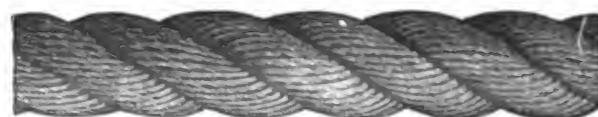
INTRODUCTION—Recognizing the importance to Builders of thoroughly reliable rope for hoisting and numerous other purposes in construction work, we are exercising particular care that our products shall always fully come up to the standards of strength stated in the table below.

We also wish to bring to the special consideration of architects the importance of using good rope in the equipment of Dumbwaiters, Hand Elevators and Hand-Hoisting Outfits which they may have occasion to specify. The rope for such equipments is usually furnished by the contractor without any special directions from the architect. It follows that under such conditions much poor rope is used leading to damage and sometimes serious accident to persons.

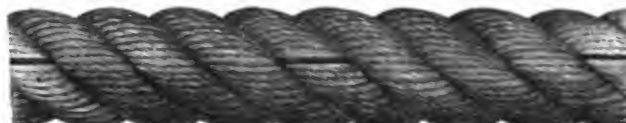
GUARANTEE—We guarantee our Columbian rope to be free from all foreign matter and to be made of strictly pure high grade hemp.

MANILA ROPE—Manila fiber is the strongest known fiber, and rope made from it is used in more places and under more varied conditions than any other rope manufactured. Quality, and therefore strength, depends upon two factors—1st, the use of the proper grades of fiber, and 2nd, the knowledge of the manufacturer to properly lay and form the rope.

COLUMBIAN ROPE—Made of selected fiber of extra strength. It is the standard for comparison where rope is bought or sold. It is made most carefully by expert rope makers in the most modern mill in the country.



COLUMBIAN PURE MANILA ROPE (3-STRAND)



COLUMBIAN PURE MANILA ROPE (4-STRAND)



TRADE MARK
On Every Coil

KINDS OF ROPE—Manila Rope for general purposes is made either 3- or 4-strand, the latter being made either with or without a center core.

Most rope made is 3-strand. It has the greatest tensile strength and is generally the most useful and dependable form. For all purposes, except Marine work, hard-laid (twisted) rope is used.

Four-strand rope is about 5% heavier than 3-strand, and from 5 to 8% weaker. Four-strand rope is used for a few special purposes.

WEIGHTS AND SIZES OF 3-STRAND
MANILA ROPE

COILS, 1200 FEET HALF COILS, 600 FEET

Circf.	Dia.	Weight per Coil	Feet per Pound	Strain Borne by New Manila Rope
1/2 in.	5/16 in.	35 lbs.	50 ft.	550 lbs.
3/4 "	3/8 "	45 "	40 "	620 "
1 "	7/16 "	50 "	30 "	1,000 "
1 1/8 "	1/2 "	55 "	24 "	1,275 "
1 1/4 "	5/8 "	65 "	20 "	1,875 "
1 1/2 "	3/4 "	85 "	14 "	2,400 "
1 3/4 "	7/8 "	120 "	10 "	3,300 "
2 "	1 "	160 "	7 1/2 "	4,000 "
2 1/4 "	1 1/8 "	200 "	6 "	4,700 "
2 1/2 "	1 1/4 "	240 "	5 "	5,600 "
2 3/4 "	1 3/8 "	300 "	4 "	6,500 "
3 "	1 1/2 "	350 "	3 1/2 "	7,500 "
3 1/4 "	1 5/8 "	420 "	2 7/8 "	8,900 "
3 1/2 "	1 3/4 "	480 "	2 1/2 "	10,500 "
3 3/4 "	1 7/8 "	560 "	2 1/4 "	12,500 "
4 "	2 "	640 "	1 3/4 "	14,000 "
4 1/4 "	2 1/8 "	720 "	1 1/2 "	15,400 "
4 1/2 "	2 1/4 "	800 "	1 1/4 "	16,200 "
4 3/4 "	2 3/8 "	900 "	1 1/3 "	17,000 "
5 "	2 1/2 "	1,000 "	1 1/8 "	20,000 "
5 1/2 "	2 3/4 "	1,200 "	1 "	25,000 "
6 "	2 7/8 "	1,440 "	10 in.	27,500 "
6 1/4 "	3 "	1,550 "	9 5/10 "	30,000 "
6 1/2 "	3 1/8 "	1,675 "	8 3/4 "	33,000 "
7 "	3 1/4 "	1,950 "	7 7/8 "	37,000 "
7 1/2 "	3 3/8 "	2,240 "	6 1/2 "	43,000 "
8 "	3 1/2 "	2,540 "	5 2/3 "	50,000 "
8 1/2 "	3 3/4 "	2,880 "	5 "	56,000 "
9 "	3 7/8 "	3,200 "	4 1/2 "	62,000 "
9 1/2 "	4 "	3,600 "	4 "	68,000 "
10 "	4 1/8 "	4,000 "	3 3/4 "	75,000 "

TRANSMISSION ROPE—Always made 4-strand with core as follows:

COLUMBIAN Tallow-laid Transmission Rope (for indoor drives).

COLUMBIAN Graphite-laid Transmission (for outdoor drives).

COLUMBIAN SPECIAL—Core and center yarns laid in graphite with balance of yarns in our special light lubricant (recommended for indoor drives).

Our Columbian Book of Rope Transmission contains much valuable information for architects. Sent on request.

PRICES—In giving sizes of rope always specify whether diameter or circumference measurements are wanted.

Rope is sold by pound.

As the price varies with the market quotations of hemp, we are unable to name prices here. Present quotations furnished upon request.

Milwaukee Concrete Mixer and Machinery Co.

Manufacturers of
Concrete Mixers and Machinery

Eastern Manager
H. T. Peirce
704 Bulletin Bldg.
PHILADELPHIA, PA.

Office and Factory
MILWAUKEE, WIS.

List of Representatives

ATLANTA, GA., DeMarco Fulford Co.
BALTIMORE, MD., Maryland Equipment & Supply Co.
BOSTON, MASS., Lamont & Nelson
CHICAGO, ILL., T. O. Browning
CINCINNATI, OHIO., Cincinnati Iron & Steel Co.
COLUMBUS, OHIO, Osborne & Sexton Machinery Co.
CORY, PA., Cory Bridge & Supply Co.
DAVENPORT, IOWA, Lumsden & Meier
DENVER, COLO., A. M. Ferguson
DETROIT, MICH., Frederick L. Hall
DULUTH, MINN., Kelley How Thomson Co.
FORT WAYNE, IND., W. D. Miller
KANSAS CITY, MO., Fireproof Building Materials Co.

LAFAYETTE, IND., W. J. Rosebery, Sr.
LOS ANGELES, CAL., A. F. George Co.
LOUISVILLE, KY., Thos. L. Barrett
NEW YORK, N. Y., Dodge & Dodge
PITTSBURGH, PA., Contractors Machinery & Supply Co.
PORTLAND, ORE., Beebe Co.
RICHMOND, VA., Jos. A. Bell
SALT LAKE CITY, UTAH, Galigher Machinery Co.
SAN FRANCISCO, CAL., Berger & Carter
SPOKANE, WASH., Wimo Supply Co.
ST. LOUIS, MO., Geo. W. Dudley
TAMPA, FLA., R. T. McEachern & Co.
VANCOUVER, B. C., CAN., A. F. Nye
WINNIPEG, MAN., CAN., Stuart Machinery Co.

PRODUCTS—MILWAUKEE CONCRETE MIXERS, MILWAUKEE CONCRETE ELEVATORS, MILWAUKEE CONCRETE DISTRIBUTING TOWERS, STEAM AND GASOLINE ENGINES, STEAM AND ELECTRIC HOISTS.

TECHNICAL DESCRIPTIONS—Simplicity is the keynote in the design of the Milwaukee Concrete Mixer. The Drum is made of two semi-steel castings, with machined facing flanges, bolted together. The sprocket segments are bolted to these flanges at the same operation. There are no rivets or bolts on the interior of the drum except those which bolt the elevating buckets. We call special attention to the spheroidal form of the drum. This design produces a mixing receptacle in which all material is naturally thrown toward the center and there is no possibility of the concrete slopping out. It is driven by a center chain belt drive. The rollers or tracker wheels on which the drum revolves are placed far back near the center of the drum, precluding the possibility of concrete, dirt or other foreign mate-

rial lodging on them, and are machined true, insuring accurate alignment. They are sixteen inches in diameter, with twelve-inch bearings, and chilled in the same manner as freight car wheels.

The frame is all-steel construction, so designed that it is not necessary to block up the Mixer. The frame is short and wide, made of angles and channel iron, riveted together. It is a frame that we can guarantee for the life of the Mixer. The steam engine is so arranged that a belt may be attached to the flywheel to run a saw or a pump. By pulling a lever of the automatic water tank, water is secured. The adjustment of a set screw is all that is necessary to regulate the desired quantity.

The Mixer is driven with a steel roller chain constructed with case hardened bushings, and pins which we guarantee for two years, and which we believe will last for five. The truck wheels are extra large, twenty-four inches in diameter, with six-inch faces.



DRUM OF THE MILWAUKEE CONCRETE MIXER
(Exterior View)



MILWAUKEE CONCRETE MIXER
On Steel Trucks, Equipped with Gasoline Engine and Automatic Hoisting Bucket
(with Steel House Open)

OUR PROPOSITION—We will put a Milwaukee on your work. Try it out in your own way. Give it the most severe test you know. After five days' trial accept it or reject it. You judge as to whether or not the Milwaukee is superior to any Mixer that you have ever used. We only ask a chance to prove our claims. The simplicity of the Milwaukee Mixer is such that experts are not required to operate it. All mixers are completely set up and thoroughly tested before leaving our factory, insuring a smooth running machine.

WHY WE CLAIM SUPERIORITY—

BECAUSE our proposition is fair and square, and our guarantee unequalled.

BECAUSE you do not have to block up the MILWAUKEE as is necessary with other Mixers.

BECAUSE they hold more than we claim and have excess power for operating.

BECAUSE they can be moved from place to place without dismantling or taking out a single bolt.

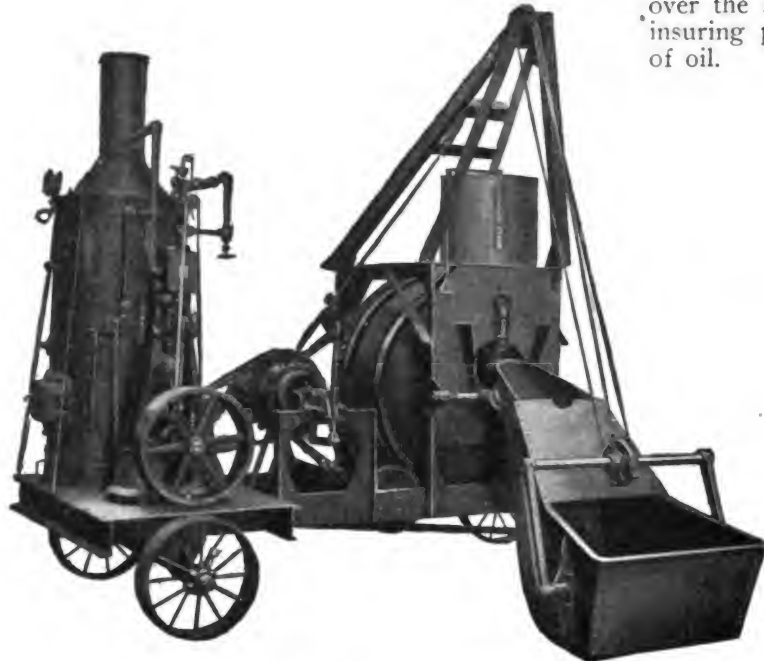
BECAUSE it is only necessary to oil the tracker wheels once a month.

BECAUSE they are guaranteed longer than our nearest competitors.

There are other reasons too numerous to mention.

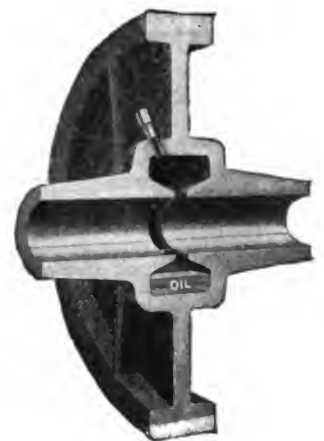
CATALOG—Write to our nearest representatives for catalog. It will be worth your while.

IMPROVED OILING SERVICE—We have designed a self-oiling device in the Tracker Wheels and Hoisting Drum; a cast reservoir or oil cellar in the hub, large enough to hold a pint of oil, makes it necessary to replenish oil only once a month. When the Mixer is in operation the oil is carried upward and poured over the shaft, returning to the reservoir, insuring perfect lubrication and a saving of oil.



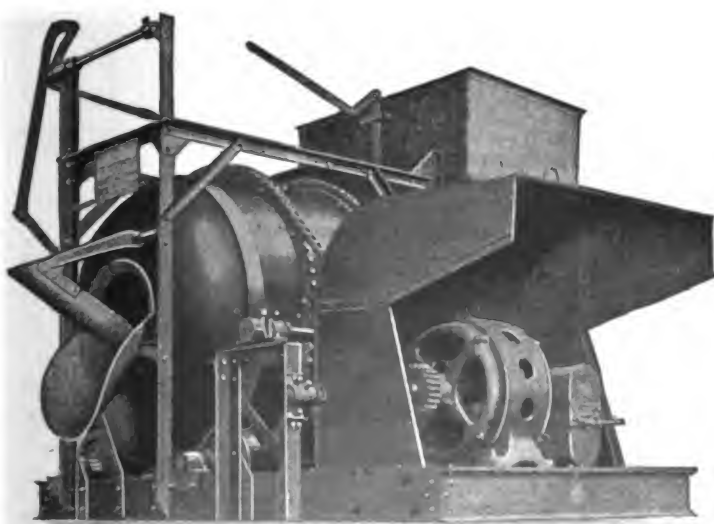
MILWAUKEE CONCRETE MIXER

On Steel Trucks, Equipped with Steam Engine and Boiler, Automatic Hoisting Bucket and Water Tank



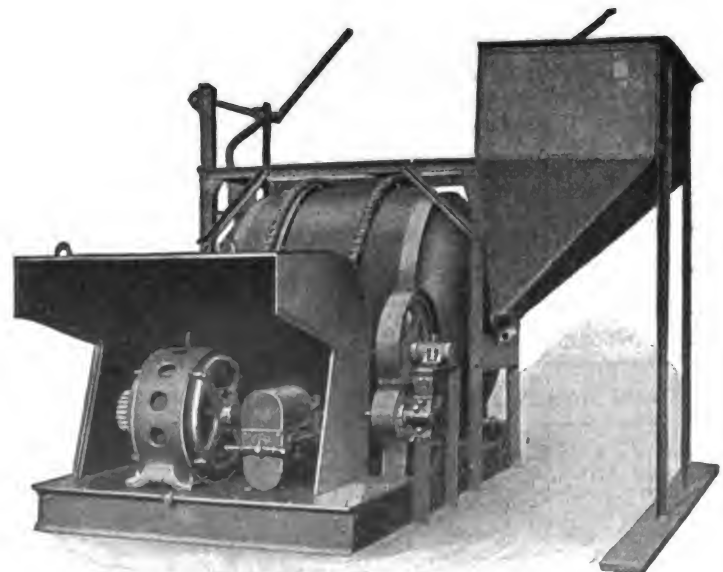
OILING DEVICE

SIZES—Made in twelve sizes, handling from 3 cubic feet to 80 cubic feet per batch. We offer 100 different styles operated by Steam, Gasoline or Motor Power.



MILWAUKEE CONCRETE MIXER NO. 8 (FRONT VIEW)

80 Cubic Feet Capacity; Equipped with Batch Hopper. Steel Housing Over Motor. Levers Both on Batch Hopper and on Discharge Chute Are Operated by ONE MAN



MILWAUKEE CONCRETE MIXER NO. 8 (REAR AND SIDE VIEW)

Now Being Used by the Great Lakes Dredge & Derrick Co. of Chicago on the Locks at the Soo Canal. Four Milwaukeees, bought by the Geo. A. Fuller Co., Chicago, Are in Use on the Kansas City Depot

Milwaukee Mixers are doing service on the Panama Canal.

CLASSIFICATION PAGE OF
SECTION 4

Waterproofing and Dampproofing

(Technical Paints and Preservative Coatings see Section 5)

Section Synopsis

Asphaltum, Coal Tar Pitch, Felts, etc.; Patent Waterproofing Compounds and Coatings; Cement and Concrete Admixtures; Waterproof Portland Cement; Stone Coatings, stain-preventive;

Wall Coatings; Plaster Bonds under plastering; Damp Course; Contracting

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX	
REGULAR CLASSIFICATION	
1	Asphaltum, coal tar pitch and felt waterproofing, foundations, cellars, etc.
2	Cement and concrete, admixtures for
3	Damp course, prepared
4	Membranous waterproofing, patent materials and processes
5	Special compounds and coatings, external waterproofing applications
6	Stone coating, stain-preventive
7	Waterproof Portland cement, special
8	Plaster bond, wall coating under plastering
SPECIAL CLASSIFICATION	
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
21	Cement floor dustproofer (S. 5)
22	Felt, cement and gravel roofing, standard (S. 26 B)
23	Masonry dampproofing coatings (S. 5)
24	Metal protective paints and coatings (S. 5)
25	Roof coatings, renovating (S. 5 & 26 B)
26	Stone preservatives (S. 5)
27	Wood shingle stain (S. 39 C)
TRADE NAMES AND BRANDS	
"Antakwa," waterproofing coatings, metal protective paints, etc., Catalog 1	
"Flintkote," waterproofing compound, S. 26 B, Catalog 5	
"Hydrolite," cement admixture, S. 26 B, Catalog 3	
"I.D.P. Art-o-Fin," floor enamel, wall finish and structural paint	
"I.D.P. Felbur," membranous system of water proofing	
"I.D.P. Hydraliquid," Portland cement water proofing compound	
"I.D.P.," water proof compounds	
Catalog 2	

"J-M," asbestos felt water-proofing	
"J-M," asphalt water-proofing cement	
"J-M," cut stone backing	
"J-M," plaster bond	
"R.I.W.," plaster bond, and membrane waterproofing	
"Toxement," water proofing admixture for cement and concrete	
S. 26 B, Catalog 8	
S. 5, Catalog 3	

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30
1	Antakwa Company, The Chicago, Ill.	4 5	6 8			23 24 26
2	Illinois Damp-proofing Co., The Chicago, Ill.	2 3 4 5	6 8			21 23 24 27

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.

American Bitumastic Enamels Co.
S. 5, Cat. 4
(Special waterproofing coatings)

Flintkote Manufacturing Co.
S. 26 B, Cat. 5
(Special waterproofing coatings)

Johns - Manville Co., H. W.
S. 26 B, Cat. 8
(Asbestos felt waterproofing, stone coating, plaster bond, etc.)

National Roofing Co.
S. 26 B, Cat. 3
(Waterproofing cement admixture)

Toch Brothers
S. 5, Cat. 3
(Special waterproofing coatings)

See also the Catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES.

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20
American Asphaltum & Rubber Co. Chicago, Ill.	1 3 4					Flexible Compound Co..... Philadelphia, Pa.	3 4	7 8			25	Lamson & Bros., John S., Inc. New York, N. Y.	1			
American Diamond Blast Co. New York, N. Y.		7				Ford Mfg. Co..... St. Paul, Minn.	1 4				21 22 23 25 26	McClintock & Irvine Co..... Pittsburgh, Pa.	1			
Barrett Mfg. Co..... New York, N. Y.	1 3 4				22 25 26	Garrett & Son Co., C. S..... Philadelphia, Pa.	1	8			21 22 25	McCormick Waterproof Port- land Cement Co. St. Louis, Mo.	4	7		
Bird & Son, F. W..... East Walpole, Mass.	1 3				21 22 23 25 26	General Roofing Mfg. Co..... E. St. Louis, Ill.	1 3				21 22 23 25	Maumee Chemical Co..... Toledo, Ohio	2			
Borden Varnish Co..... St. Louis, Mo.	4					Girvan-Nachod Co..... New York, N. Y.	1 3 4	6			23	National Waterproof Co..... Chicago, Ill.	4			
Brown Paint Co., Chas. H... Brooklyn, N. Y.	4					Glidden Varnish Co..... Cleveland, Ohio	2 3	6			23 26	North Jersey Paint Co..... New York, N. Y.	4			
Burns, C. L..... New York, N. Y.	2 4					Good Products Co..... Chicago, Ill.	3	7			23 26	Obelisk Waterproof Co..... New York, N. Y.	4	6		
Carey Company, Phillip.... Lockland, Cincinnati, Ohio	1 3 4				22 23 25 26	Harrison Waterproof Mater- ials Co. New York, N. Y.	4 5	7 8			23	Patent Vulcanite Roofing Co. Chicago, Ill.	1 3	6		
Ceresit Waterproofing Co.... Chicago, Ill.	2					Hercules Waterproof Cement Co. Buffalo, N. Y.	4	7				Sandusky Portland Cement Co. Sandusky, Ohio		7		
Chatfield Mfg. Co..... Carthage, Ohio	1 3 4	6			22 23 25 26	Horn Co., A. C..... New York, N. Y.	2 3 4					Sicilian Asphalt Paving Co.. New York, N. Y.	1			
Chesapeake Oil Co., Inc..... Baltimore, Md.	1 3 4					Hydrex Felt & Engineering Co. New York, N. Y.	1					Sonneborn Sons, L., Inc..... New York, N. Y.	3 4			
Concrete Waterproof Paint Co. Philadelphia, Pa.	4 5					Hydro-Bar Waterproofing Co. New York, N. Y.	3 4	7				Standard Asphalt & Rubber Co. Chicago, Ill.	1 3 4			
Densmore Stabler Refining Co. Los Angeles, Cal.	1					Insulite Chemical Co..... Aurora, Ill.	3	6 8				Stowell Mfg. Co..... Jersey City, N. J.	1 4			
Diern & Wing Paper Co..... Cincinnati, Ohio	1 3				21 22 24 25 26	Illinois Waterproofing Co.... Chicago, Ill.	4	7				Texas Co..... New York, N. Y.	4	7		
Elatrite Paint & Mfg. Co.... Des Moines, Iowa	3 4 5					Innote Co..... Chicago, Ill.	2 4	8			23	Trinidad Asphalt Mfg. Co.... St. Louis, Mo.	1 3 4	6		
						King Refining Co..... San Francisco, Cal.	1					Warren Bros. Co..... Boston, Mass.	1 4	7 8		
												Waterproofing Co..... New York, N. Y.	4			

The Antakwa Company

Manufacturers of Waterproof and Dampproof Paints

403 CHAMBER OF COMMERCE

CHICAGO, ILL.

PRODUCTS—ANTAKWA DAMP-RESISTING PAINTS; ANTAKWA PLASTER KEY; ANTAKWA MEDIUM; ANTAKWA HEAVY; ANTAKWA COLORLESS; ANTAKWA BLACK PAINT for Steel and Iron



TECHNICAL DESCRIPTION—The dampproofing preparations sold under the trade mark "Antakwa" (Anti-Aqua) are scientific compounds, unalterable, acidproof, alkaliproof, stain-preventive, elastic and permanent in their action. They are, also, non-poisonous and can be handled with safety. Their composition is secret, but their good qualities are public property and attested by many architects and general users. Kindly see the testimonials below.

ANTAKWA PLASTER KEY—For application to inner walls of masonry to receive plastering direct, dispensing with furring and lathing. Of a plastic nature, so that it expands and contracts in unison with the surface to which it is applied and permits scratch coat of plaster sufficient absorption to form a perfect bond between the wall and the plaster.

We claim for Antakwa Plaster Key the front rank in efficiency as a plaster key. By its use a sanitary, fireproof, and windtight construction is secured, vermin are eliminated, space is saved, and the cost of heating the building reduced. Its stain-preventive qualities keep the plastering white and free from spots.

HOW TO SPECIFY—The whole of the walls are to be coated with The Antakwa Co.'s (Chicago, Ill.) Antakwa Plaster Key. The surface of the masonry is to be clean and dry and to be pointed up to a reasonably smooth condition. Paint to be applied with a stiff brush, care being taken that no minute pinholes are left uncovered. After application of a good continuous coat a second or retouch coat is to be given to bring surface to a uniform blackness. Plaster can be applied 24 hours after.

ANTAKWA MEDIUM—For preventing the discoloration of stone, and as a preservative. It is composed of acidproof and alkaliproof materials which prevent the alkali-charged moisture from the brick backing, or setting mortar, penetrating to the surface, staining the stone and destroying its life. Being applied cold, with a brush, it is more economical than non-staining cements, or than materials which first require the application of heat. It can be used in conjunction with burlap, felt, etc., in waterproofing against pressure.

SPECIFICATION—The unexposed parts of all cut stone, granite and marble are to be coated with The Antakwa Co.'s (Chicago, Ill.) Antakwa Medium. The stone to be in a clean and dry condition. The coating is to be applied to all unexposed parts of the stone to within one inch of the face, either in the yard or at the building before setting. Care to be exercised that no minute pinholes are left uncovered. After setting the stone, and before backing is carried up, entire inner surface, including joints, to be thoroughly covered with a second coat of Antakwa Medium.

ANTAKWA HEAVY—This is practically a cement, being much heavier in body than either Antakwa Plaster Key or Antakwa Medium. It always remains elastic. It is applied cold and is used for heavy waterproofing of foundations under ground, cellars, etc., alone or in combination with burlap or felt, which adhere to it firmly. Waterproofing can be done by this method against any ground-water pressure and prove reliable.

ANTAKWA COLORLESS—A colorless preparation for waterproofing masonry walls on the outside and at the same time preserving their natural color. It is applied with a brush. The surface should be clean and dry and care should be exercised that the entire surface be covered. By sealing the pores in the stone it prevents the admission of moisture, thereby doing away with efflorescence and greatly minimizing the destructive lodgment of dust which, instead, is washed off by the rain.

ANTAKWA METAL PAINT—Specially adapted for the protection of all kinds of structural steel and iron work, also Boiler Heads, Smoke Stacks, Tanks, Radiators, Fences, etc. It is made of the highest grade materials absolutely free from any disintegrating matter and proof against acid, water and temperature changes. This paint is chemically inactive, it stops as well as prevents corrosion, and is compounded in such a manner as to retain its elasticity indefinitely, forming a rubber-like poreless film that is proof against the ravages of time.

SPECIFICATION—Surface to be painted should be in a clean, dry condition and all rust removed. Apply a good coat of Antakwa Metal Paint. When dry all abraded parts should be touched up, also all parts not accessible after erection should receive the second coat before erecting; apply second coat in a thorough manner as soon as possible after erection.

The following is a list of some of the architects who use Antakwa Paints:

Architect	Building	Location
A. G. Brown.....	8-sty. Merc. Bldg.....	Chicago, Ill.
Shepley, Ruttan & Coolidge.....	Presbyterian Hospital.....	Chicago, Ill.
Geo. W. Maher.....	University Building.....	Evanston, Ill.
Geo. W. Maher.....	Swift Hall of Engineering, Northwestern University.....	Evanston, Ill.
C. F. Jobson.....	Roseland State Savings Bank..	Chicago, Ill.
H. J. Gaul.....	St. Ann's Home.....	Techny, Ill.
H. J. Gaul.....	St. Francis' Hospital.....	Evanston, Ill.
H. J. Gaul.....	St. Margaret's Hospital.....	Hammond, Ind.
Jennings & Kroneberg.....	Public School.....	Glencoe, Ill.
Huehl & Schmid.....	Central Masonic Temple.....	Chicago, Ill.

Architect	Building	Location
Huehl & Schmid.....	Mfg. Building Office.....	Chicago, Ill.
Huehl & Schmid.....	Allen Building.....	Chicago, Ill.
City Architect.....	Public Baths.....	Chicago, Ill.
F. M. Barton.....	Hope Publishing Co.....	Austin, Ill.
C. O. Kuehne.....	Office Building.....	Chicago, Ill.
Howard Shaw.....	Elm St. Apartments.....	Chicago, Ill.
R. E. Schmidt, Garden & Martin.....	Office Building.....	Chicago, Ill.
E. E. Roberts.....	Y. M. C. A.....	Oak Park, Ill.
Beers & Beers.....	Wells Fargo Bldg.....	Chicago, Ill.
Talmadge & Watson.....	2 Residences.....	Chicago, Ill.
S. N. Crowen.....	Western Newspaper Union...	Chicago, Ill.

and many other Architects.

"A.B.C." SYSTEMS

The Illinois Damp Proofing Co.

Waterproofing Engineers and Specialists

Waterproofing Compounds and Damp-resisting Paints

9 SOUTH LA SALLE STREET
CHICAGO, ILL.



PRODUCTS—I. D. P. WATERPROOF COMPOUNDS AND DAMP-RESISTING PAINTS; I. D. P. HYDRALIQID, for waterproofing Concrete, and for Plaster Coatings; I. D. P. No. 10, for damp-proofing Superstructures, a Plaster Bond; I. D. P. No. 15, for backing Stone and Marble; I. D. P. No. 20 and No. 40, for waterproofing Foundations and Retaining Walls, Concrete Basement Floors, etc.; I. D. P. TRANSPARENT, a colorless liquid Compound for exterior Brick, Stone, Cement and Concrete Blocks

I. D. P. FELBUR MEMBRANOUS SYSTEM OF WATERPROOFING: I. D. P. No. 40 in Connection with Felt and Burlap for Sub-basements, Tunnels, etc.

I. D. P. ART-O-FIN FLOOR ENAMEL, EXTERIOR AND INTERIOR WALL FINISHES, STRUCTURAL STEEL PAINT, for Protecting Steel and Iron, and SHINGLE STAIN, for waterproofing and coloring Wood Shingles and Tiles

GENERAL DESCRIPTION—I. D. P. HYDRALIQID is a fluid lixivious compound for fusing, that is, liquefying and thereby increasing the efficiency of Portland Cements. It is a lixiviating, i. e., leaching chemical, the purpose of which is to excite the production of colloids, or glues, in the cement, thereby bringing into service all the colloid possibilities of Portland cements, which in themselves are the best and most efficient waterproofing medium.

It is manufactured in concentrated form to be reduced on the job with from ten to fourteen parts of water. About $1\frac{1}{2}$ gallons of I. D. P. Hydraliquid is required to each barrel of cement. It is used to waterproof the concrete in the mass and also in the cement plaster coatings applied after the building is erected. Full specifications furnished on application for this system of waterproofing.

I. D. P. FELBUR MEMBRANOUS SYSTEM OF WATERPROOFING—This system is applied where there is a possibility of shifting soil, such as sand, quicksand, etc., and a danger of a large degree of settlement. It requires the use of our heaviest Compound, I. D. P. No. 40, in conjunction with two layers of saturated felt and an intermediate layer of 8-ounce, open-mesh burlap laid between two separate pourings of concrete.

SPECIFICATIONS—As soon as body layer of concrete has set, lay one thickness of saturated wool felt, say, not less than 14 pounds to the square of 100 square feet. Over this saturated felt lay one thickness of 8-ounce, open-mesh burlap and thoroughly mop with I. D. P. No. 40. Then apply, at right angles to preceding wool felt layer, another layer of saturated wool felt over second layer of burlap and apply another heavy mop coat of I. D. P. No. 40, following immediately with top course of concrete.

The waterproofing shall be carried through the wall and up outside to a point 12 inches above highest water level. When above instructions cannot be used, the waterproofing may be carried 12 inches above water level on the inside wall backed up by a retaining wall.

I. D. P. No. 10—A damp-resisting paint for dampproofing brick and concrete walls which are to be plastered, completely filling the pores on the surfaces of the same so that they are made absolutely dampproof and stainproof. When the brown plaster coat is applied the surface of this dampproof coating softens and becomes partially absorbed by the body coat of plaster, thus forming a permanent bond or key between plaster and brick or concrete walls.

This eliminates wood furring and lath, saves $1\frac{1}{2}$ to 2 inches in thickness of walls, at the same time providing a fireproof and sanitary structure. This coating also will apply to interior tile partitions and ceilings, prevents saltpeter coming to the surface and discoloring finished plaster. Covering capacity, per gallon, 85 square feet, one coat.

I. D. P. NO. 15—An alkaliproof compound for backing limestone, marble or granite facing, preventing discoloration and protecting the face work from any chemical action caused by the surrounding masonry. Covering capacity, per gallon, 100 square feet, one coat.

I. D. P. NO. 20—The same as No. 10 but heavier, and adapted for exterior surfaces of concrete foundation walls for tunnel construction. Covering capacity, per gallon, 60 square feet, two coats.

I. D. P. NO. 40—Our heaviest compound especially adapted for abattoir, laundry, swimming tank, sub-basement and boiler-room floors, concrete slab roofs, etc. It is laid between two layers of concrete, and forms a permanent bond. Often used between two sections of concrete in connection with one ply of 8-ounce, open-mesh burlap. Covering capacity, per gallon, 40 square feet, one coat.

I. D. P. ART-O-FIN EXTERIOR WALL FINISH—This is a beautiful, soft-tone finish, designed for the purpose of damp-proofing and beautifying all exterior walls, whether concrete, cement block, brick or stucco.

I. D. P. ART-O-FIN INTERIOR WALL FINISH—A valuable, sanitary finish for all kinds of interior walls. Gives a varied and attractive color effect without the artificial appearance of paint.

I. D. P. ART-O-FIN FLOOR ENAMEL—This enamel is made of hard Kauri gum, combined with specially treated oils and a mineral pigment. When applied to a concrete floor it mechanically seals the pores in the concrete and binds loose particles together, so as to eliminate dusting. The enamel forms an exceedingly tough film on the surface of the floor, which prevents absorption and abrasion and which may be readily wiped up or washed. Color card furnished giving full description upon application.

I. D. P. ART-O-FIN SHINGLE STAIN—This stain is applicable for waterproofing and coloring wooden shingles and tiles, preserving the material and responding with beautiful, artistic, harmonious and pleasing effects.

I. D. P. ART-O-FIN STRUCTURAL STEEL PAINT—For steel and iron railway, city and county bridges, etc.

Prices, References, Specifications, Consultation, Directions and Guarantee upon application.

**CLASSIFICATION PAGE OF
SECTION 5**

Technical Paints and Preservative Coatings

(Standard Paints, Varnishes, etc. see Section 39)

Section Synopsis

**Dampproofing, Fire-resistant, Acidproof and Metal-protective
Paints or Coatings; Graphite, and Graphite Paint; Composition
Roof Coatings; Wood Preservatives; Cement-Floor Dustproofers;**

Stone Preservatives and Renovators; Wood Fireproofing; Timber and Lumber Creosoting; Insulating Paint

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX		TRADE NAMES AND BRANDS		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
						1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
REGULAR CLASSIFICATION										
1	Graphite, material	"Amalgam," paint, iron } S. 39 B, Catalog 2 "Velveta," brick and cement coating	4	American Bitumastic Enamels Co. Philadelphia, Pa.	2	12				
2	Ready-mixed paints:—				3					
3	Acidproof, paints, enamels	"Antakwa," dampproofing coatings, protective metal paint, S. 4, Catalog 1 "Avenarius Carbolineum," wood preservative, Catalog 6	6	Carbolineum Wood Preserving Co. New York, N. Y.	15	17				
4	Alkaliproof, paints, enamels				16					
5	Asbestos, fireproof	"Bitumastic," metal enamels, and coatings, Catalog 4 "Carbonneale," metal paint, S. 43 A, Catalog 2	2	Debevoise Company, The Brooklyn, N. Y.	6	12			35	
6	Asphaltum, iron				8	13			36	
7	Brick and cement work, damp-proofing	"De-Co," varnishes, wood finishes, enamels, cement paint, and filler } Catalog 2 "Eureka," metal paint, water-proofing paint, etc. "Dextrolite," wall enamel	5	Dexter Brothers Co. Boston, Mass.	6	8			42	
8	Carbon paints				8				43	
9	Cement floor dustproofers, fillers	"Petrifax," wall enamel "Petrifax Calx," dampproofing coating	1	Dixon Crucible Co., Joseph Jersey City, N. J.	9				35	
10	Graphite, iron paint				8				36	
11	Insulating paint, electrical work	"Roman Calx," interior oil finish "Edinburgh," mortar colors "Everlite Koating," enamel paint "Liquid Konkerit," cement paint "R.I.W.," line of paints and compounds } Catalog 3 "Tockolith," cement paint "Toxement," waterproofing compound "Toxloxpore," dampproofing paint "Verte Antique," copper stain "Wonder-Koat," interior enamel	2	Eureka Chemical Company of New Jersey, The Brooklyn, N. Y.	6	12			35	
12	Roof waterproofers, renovating				8	13			36	
13	Special metal protective and marine	"Granolith," brick and cement coating, S. 39 D, Catalog 3 "Hidrolite," brick and cement coating, S. 39 D, Catalog 2 "I.D.P.," dampproofing coatings and protective metal paint "I.D.P. Art-o-fin," damp-proofing wall coatings, cement-floor dustproofers and structural iron paint } S. 4, Catalog 2 "J-M," concrete primer "J-M," liquid water-proof coating } S. 26 B, Catalog 8 "National XX," graphite paint "Retaw," waterproofing paint } S. 26 B, Catalog 3 "Silica-Graphite," iron paint, Catalog 1 "Tunaloid," dampproofing, S. 26 B, Catalog 5	4	Hermiston & Son James, Philadelphia, Pa.	2	12			34	
14	Stone preservatives, renovating				3				35	
15	Timber and lumber creosoting								37	
16	Wood fireproofers								38	
17	Wood preservatives								39	
18	Wood preserving outfits								42	
SPECIAL CLASSIFICATION										
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.										
33	Calcimines and cold-water paints (S. 39 D)									
34	Cement and concrete admixtures (S. 4)									
35	Enamel paint (S. 39 B)									
36	Flat wall finish (S. 39 D)									
37	Membrane waterproofing (S. 4)									
38	Mortar colors (S. 39 A)									
39	Plaster bond, wall coating under plastering (S. 4)									
40	Ready-mixed interior and exterior standard paints and materials for same (S. 39 A & B)									
41	Shingle stains (S. 39 C)									
42	Stone coating, stain preventive (S. 4)									
43	Varnish, hard-oil finish, fillers, japans, stains, wax polish, etc. (S. 39 C)									
44	Verdigris stain, copper effect (S. 39 C)									

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.

Antakwa Company, The
S. 4, Cat. 1
(Metal paint and dampproofing coatings)

Colonial Works
S. 39 B, Cat. 2
(Cement coating, special iron paints)

Eberhardt & Co.
S. 43 A, Cat. 2
(Waterproof compounds for steel, wood, concrete, iron paint)

Flintkote Manufacturing Co.
S. 26 B, Cat. 5
(Dampproofing coatings)

Hildreth Varnish Co.
S. 39 D, Cat. 2
(Brick and cement coatings)

Illinois Dampproofing Co., The
S. 4, Cat. 2
(Brick and cement dampproofing, cement-floor dustproofers, metal protective coatings)

Johns-Manville Co., H. W.
S. 26 B, Cat. 8
(Concrete primer, and liquid waterproof coating)

National Roofing Co.
S. 26 B, Cat. 3
(Technical paints)

North Western Expanded Metal Co.
S. 12 A, Cat. 1
(Metal protective coating)

U. S. Gutta Percha Paint Co.
S. 39 D, Cat. 3
(Concrete coatings, and structural iron paints)

See also the catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES.

Manufacturers without Catalog data

Sub-Index Numbers

	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
Acme White Lead & Color Works Detroit, Mich.	5 8	9 12			33 35 40 43
Ajax Paint Co..... Indianapolis, Ind.	6				35 40
American Asphaltum & Rubber Co. Chicago, Ill.	2 5 6	10 11			
American Creosote Works. New Orleans, La.	5	16			
Arlington Mfg. Co..... Canton, Ohio	6	12			
Armitage & Co., J. L. Newark, N. J.	7	10			
Ashland Paint Co..... Huntington, W. Va.	1 5 6	11 12 13 15 16			
Atlantic Paint Co..... Cleveland, Ohio	5	9			40
Atlantic Refining Co..... Cleveland, Ohio	6	9 12 16			35 40
Atlas Paint Co..... Nashville, Tenn.	7	12			
Barrett Co., Chas. A. P..... Dayton, Ohio	5	9			33 35 40 43
Becker-Moore Paint Co..... St. Louis, Mo.	4 5 6 7	9 10 12 13			33 40
Bennett Glass & Paint Co... Salt Lake City, Utah	6	9			35 40
Billings Chapin Co..... Cleveland, Ohio	2 5 6 7 8	9 11 12 13			35 40 43
Billings-King & Co..... New York, N. Y.	2 5 6 7 8	9 11 12			35 40 43
Bird, F. W. & Son..... East Walpole, Mass.	6 8				
Bird & Co., J. A. & W..... Boston, Mass.	5 6	10 11			33 35
Bitmo, Wm. Cail..... New York, N. Y.	2 3 7	12			
Blanchite Paint Co..... New York, N. Y.	6 8				33 35
Block Brennan Refining Co. Chicago, Ill.	7				
Bowen & Sons, S..... Philadelphia, Pa.	2 4 8	12 13			35 43
Boydell Bros. White Lead Co. Detroit, Mich.	5	9			35 40
Briggs & Co., John..... Boston, Mass.	6	10			35 40
Buffalo Oil Paint & Varnish Co. Buffalo, N. Y.	2 5	9 12 16			33 40 43
Bushnell Co., A..... Indianapolis, Ind.	4 5 6	9 11 13 16			33 35 40 43
Canby, C. L..... New York, N. Y.	6 8				35
Chemical Paint Co..... Oakland, Cal.	2 4 5 6 7 8	9 10 11 12 13 15			33 35 40 43
Chemical Paint Co., H..... New York, N. Y.					33 35 40 43

Manufacturers without Catalog data

Sub-Index Numbers

	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
California Paint Co..... Oakland, Cal.	2 4 5 6 7 8	9 10 11 12 13 15 16			33 35 40 43
Capitol Paint, Oil & Varnish Co. Washington, Pa.	5 7	9			40 43
Carey Co., Phillip..... Lockland, Cincinnati, Ohio	6	11 13			
Chatfield Mfg. Co..... Carthage, Ohio	6	11 13			
Cheesman & Elliot (National Paint Works) New York, N. Y.		12			40
Chicago Ironite Waterproofing Co. Chicago, Ill.	6	13			
Childs & Co., Chas. M. New York, N. Y.	6 8	9 12			40
Clinton Metallic Paint Co... Clinton, N. Y.	5	12			
Connors Paint Mfg. Co., Wm Troy, N. Y.	2 4 5 6 7 8	9 11 12 13 15 16			33 35 40 43
Depew Carbon Paint Co... Chicago, Ill.	2 7	10 11 12			
Detroit Graphite Co..... Detroit, Mich.		9 12			40
Detroit White Lead Works Detroit, Mich.	5 6 8	9 12 16			33 35 40 43
Dielectric Mfg. Co..... St. Louis, Mo.	2 5 6 8	10 11 13 16			35 40 43
Eagle Paint & Varnish Co. Allegheny, Pa.	5 7	12			35 40 43
Elatrite Paint & Mfg. Co. Des Moines, Iowa	2 6	12			39
Electric Fireproofing Co. New York, N. Y.		15 16			

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
Felton, Sibley & Co..... Philadelphia, Pa.	5	9 12			35 40 43							Kirby Paint Co., Geo. Jr.... New Bedford, Mass.		9 12 16			35 40 43
Flexol Co..... New York, N. Y.	6	12			43	Heppes Co..... Chicago, Ill.		11									
Ford Mfg. Co..... St. Paul, Minn.	6	11 13				Hetzel, J. C., Estate of..... Newark, N. J.	2 5 6 7	10 11 12 16			35						
Forest City Paint & Varnish Co. Cleveland, Ohio	5 6 7 8	9 12 13 16			35 40 43	Hoffman Paint & Varnish Co. Boston, Mass.	5 6	9 12			33 35 40 43	Lakey Co., A. L..... Kalamazoo, Mich.	4 5	9 11			35 40 43
Frazer Paint Co..... Detroit, Mich.		12			40	Horn, A. C..... New York, N. Y.	6	11 13			34 42	Lawrence & Co., W. W..... Pittsburgh, Pa.	2 6 7 8	9 12 16			33 35 40 43
French & Co., Samuel H..... Philadelphia, Pa.	5	9 16			33 35 40 43	Huff, W. H..... Beverly, N. J.		16				Lino Paint Co..... Collingwood, Ohio		11 12 13			35 40 43
Fuller & Co., W. P..... San Francisco, Cal.	2 5 6 7 8	9 11 12			35 40 43	Hutchinson Scott Co..... New York, N. Y.	6 8	10 12			35 40 43	Long Co., Charles R., Jr..... Louisville, Ky.	7	9 11 12			
						Hydro-Bar Waterproofing Co. New York, N. Y.	2 6	10 13									
Garrett & Son Co., C. S..... Philadelphia, Pa.		11				Illsley-Doubleday & Co..... New York, N. Y.		9			33	McClintock & Irvine Co..... Pittsburgh, Pa.	6	11			
General Roofing Mfg. Co.... E. St. Louis, Mo.	6	11			35	Indianapolis Chemical Co... Indianapolis, Ind.		14			41	McKinley, Perkins Co..... Oakland, Cal.	2 5 6	9			35 40
Girvan-Nachod Co..... New York, N. Y.	6	11			35	Indian Refining Co..... New York, N. Y.		16				McMurtry Mfg. Co..... Denver, Col.	5 6 8	9			40 43
Glidden Varnish Co..... Cleveland, Ohio	2 5 6 8	9 11 12 15 16			35 43	Insulite Chemical Co..... Aurora, Ill.	6	10 12									
Globe Asphalt Co..... Pittsburgh, Pa.	5					Jamestown Paint & Varnish Co. Jamestown, Pa.	2 4 5 6 7	9				Maire Paint Co..... Minneapolis, Minn.	1 6	10 11 12 16			33
Goheen Mfg. Co..... Canton, Ohio	7	12				Jenkins Paint & Oil Co..... Norfolk, Va.	6 7 8	9 12 13 16			33 35 40	Mammoth Carbon Paint Co Cincinnati, Ohio	2 7 8				35
Good Products Co..... Chicago, Ill.	2 6 7	9 10 11 12 13			40	Jones Paint Co..... Rome, N. Y.	7	9 11 12 16				Marine Paint Corporation... Norfolk, Va.	6	12 16			35 40 43
Gould Gibraltar Paint Co.... New York, N. Y.	4 6					Kay & Ess Co..... Dayton, Ohio	2 4 5 6 7 8	10 11 12 13 16			35 40 43	Menzel & Son, William..... New York, N. Y.		16			
Grosche & Co., Bruno..... New York, N. Y.	6	16			41	Keller Paint Works..... Elmira, N. Y.	6	9 11 12				Mets Paint Co., P. A. (2) Buffalo, N. Y.		9			35 40 43
						Keystone Albumen & Paint Co. Philadelphia, Pa.		12 16			40	Michigan Paint Co. Flint, Mich.	5	9 11 12			35 40 43
Hammond-Boynton Paint & Chemical Co. Norwich, Conn.		9 12				King & Co., William H..... New York, N. Y.	8	12 16			40 43	Minwax Co..... New York, N. Y.	2 4	10 12			40 42
Hascall Paint Co..... Cleveland, Ohio	2 5 6 7 8	9 11 12			40 43							Montark Paint Mfg. Co. Brooklyn, N. Y.	7 8				35
Hazard Lead Works..... Hazardville, Conn.	5	9 12 16			33 35 40 43							More & Co., Benjamin Brooklyn, N. Y.	6 8	9 12 13 16			33 35 40 43
Heath & Milligan Mfg. Co.... Chicago, Ill.	2 6 7 8	9 10 12 13 16			35 40 43							Metrop Paint Co. Reading, Pa.	1 6	9 16			33 35 40 43
												Messner Co., Chas. Cincinnati, Ohio		9 12			33 35 40

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32
						Richmond Bros. Cincinnati, Ohio	5 6 8	9			33 35 40 43	Tarr & Wonson Gloucester, Mass.		12		
						Rinald Bros. Philadelphia, Pa.	1 6	12			35	Teredo-Proof Paint Co. New York, N. Y.		12 16		
Nashville Carbon & Oil Co. Nashville, Tenn.	7											Thomas Paint Co., A. H. Waverley, N. Y.	5 7	9 12 16		
Nason & Co., R. N. San Francisco, Cal.	5 7	9 16			35 40 43											
						St. Louis Surfacers & Paint Co. St. Louis, Mo.	5 6 7	9 12			35	Tredennick Paint Co., L. Meriden, Conn.	2 5 8	11 12 16		
Neuchatel Asphalt Co. New York, N. Y.	5					St. Paul White Lead & Oil Co. St. Paul, Minn.	2 4 5 6 7	9 10 11 12 13			33 35 40 43	Trinidad Asphalt Mfg. Co. St. Louis, Mo.	2 5 6 7 8	10 11 13		
Northern Paint Co. St. Paul, Minn.	6 8	11			40 43	Schoelkopf, Hartford, Hanna Co. New York, N. Y.	7	12				Trussed Concrete Steel Co. Detroit, Mich.	5 6 8	9 10 12		
						Semet-Solvay Co. Syracuse, N. Y.	7	12								
Otley Mfg. Co. Chicago, Ill.	5 7	9 12			33	Skyo Paint Mfg. Co. Lexington, Ky.	5	9 11 16			33 35 40 43	United States Graphite Co. Saginaw, Mich.	7	9 12		
Painting Machine Co. Chicago, Ill.			17			Smith & Co., J. Lee New York, N. Y.	7	9				United States Paint Co. Williamsport, Pa.		11 12		
Parian Paint Co. Atlanta, Ga.	5 8				33 35 40 43	Sonneborn Sons, L., Inc. New York, N. Y.	6 7	9 12								
Parker, Preston & Co. Norwich, Conn.	6					Standard Oil Co. New York, N. Y.	2 5 6 8	10 11 13 16				Van Calvert Paint Co. St. Louis, Mo.	5	9		
Patek Bros. Milwaukee, Wis.	8	9			33 35 40 43	Standard Paint Co. New York, N. Y.	2 5 6	10 11				Vaughan Paint Co. Cleveland, Ohio	2 5 6 7 8	10 12 13 16		
Patent Vulcanite Roofing Co. Chicago, Ill.	6					Sterling Varnish Co. Pittsburgh, Pa.	7	12			43	Wadsworth, Howland & Co. Boston, Mass.	6	9 12 13		
Patton Paint Co. Milwaukee, Wis.	1 4 5 6 7 8	11 12 15 16			35 40 43	Stickney Color Co. Indianapolis, Ind.		12								
Pearson, M. R. New York, N. Y.	6	13				Stockton Paint Co. Stockton, Cal.	5	9 12			35 40 43	Walker Chemical Works Harrison, N. J.	5	11 16		
Phoenix Paint & Varnish Co. Philadelphia, Pa.	5	9 12			35 40 43	Stowell Mfg. Co. Jersey City, N. J.	6	11				Wetherill & Co., Geo. D. Inc. Philadelphia, Pa.	6	9 12		
Pittsburgh Wood Preserving Co. Pittsburgh, Pa.		14				Suydam Co., M. B. Pittsburgh, Pa.	1 5 6 7 8	9 10 11 12			40					
						Swift Paint Co. Cleveland, Ohio	6	12			33 40	Wiswall Paint Co. New York, N. Y.	7	9 12		
Rabok Mfg. Co. St. Louis, Mo.	7	12				Tallman Co. Toledo, Ohio	2 5 6 7 8	9 12 16			33 35 40 43	Wood Preserver Co., C. A. St. Louis, Mo.		16		
Rasmussen & Co. Portland, Ore.	5 6 8	9 10 11			33 35 40 43	Tamm & Nolan Co. San Francisco, Cal.		10			43	Wyckoff Pipe & Creosoting Co., Inc. New York, N. Y.		16		
Reeves Co. New Orleans, La.	5	11 16			35	Tarr Paint Co. Rockport, Mass.		11 16			40					
Riesenman Mfg. Co. Franklin, Pa.	2 3 4	9 12										Zbell Damp Resisting Paint Co. New York, N. Y.	6			

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Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
Felton, Sibley & Co..... Philadelphia, Pa.	5	9 12			35 40 43						Kirby Paint Co., Geo. Jr., ... New Bedford, Mass.		9 12 16			35 40 43	
Flexol Co..... New York, N. Y.	6	12			43	Heppes Co..... Chicago, Ill.		11									
Ford Mfg. Co..... St. Paul, Minn.	6	11 13				Hetzel, J. C., Estate of..... Newark, N. J.	2 5 6 7	10 11 12 16		35							
Forest City Paint & Varnish Co. Cleveland, Ohio	5 6 7 8	9 12 13 16			35 40 43	Hoffman Paint & Varnish Co. Boston, Mass.	5 6	9 12		33 35 40 43	Lakey Co., A. L..... Kalamazoo, Mich.	4 5	9 11			35 40 43	
Frazer Paint Co..... Detroit, Mich.		12			40	Horn, A. C..... New York, N. Y.	6	11 13		34 42	Lawrence & Co., W. W.... Pittsburgh, Pa.	2 6 7 8	9 12 16			33 35 40 43	
French & Co., Samuel H..... Philadelphia, Pa.	5	9 16			33 35 40 43	Huff, W. H..... Beverly, N. J.		16			Lino Paint Co..... Collingwood, Ohio		11 12 13			35 40 43	
Fuller & Co., W. P..... San Francisco, Cal.	2 5 6 7 8	9 11 12			35 40 43	Hutchinson Scott Co..... New York, N. Y.	6 8	10 12		35 40 43	Long Co., Charles R., Jr.... Louisville, Ky.	7	9 11 12				
						Hydro-Bar Waterproofing Co. New York, N. Y.	2 6	10 13									
Garrett & Son Co., C. S..... Philadelphia, Pa.		11				Illsley-Doubleday & Co..... New York, N. Y.		9		33	McClintock & Irvine Co..... Pittsburgh, Pa.	6	11				
					35	Indianapolis Chemical Co... Indianapolis, Ind.		14		41	McKinley, Perkins Co... Oakland, Cal.	2 5 6	9			35 40	
General Roofing Mfg. Co.... E. St. Louis, Mo.	6	11				Indian Refining Co..... New York, N. Y.		16			McMurtry Mfg. Co..... Denver, Col.	5 6 8	9			40 43	
Girvan-Nachod Co..... New York, N. Y.	6	11			35	Insulite Chemical Co..... Aurora, Ill.	6	10 12									
Glidden Varnish Co..... Cleveland, Ohio	2 5 6 7 8	9 11 12 15 16			35 43						Maire Paint Co..... Minneapolis, Minn.	1 6	10 11 12 16			33	
Globe Asphalt Co..... Pittsburgh, Pa.	5					Jamestown Paint & Varnish Co. Jamestown, Pa.	2 4 5 6 7	9			Mammoth Carbon Paint Co... Cincinnati, Ohio	2 5 8				35	
Goheen Mfg. Co..... Canton, Ohio	7	12				Jenkins Paint & Oil Co..... Norfolk, Va.	6 7 8	9 12 13 16		33 35 40	Marine Paint Corporation Norfolk, Va.	6	12 16			35 40 43	
Good Products Co..... Chicago, Ill.	2 6 7	9 10 11 12 13									Menzel & Son, William New York, N. Y.		16				
Gould Gibraltar Paint Co.... New York, N. Y.	4 6				40	Jones Paint Co..... Rome, N. Y.	7	9 11 12 16			Mets Paint Co., P. A. Buffalo, N. Y.		9			35 40 43	
Grosche & Co., Bruno..... New York, N. Y.	6	16			41						Michigan Paint Co. Flint, Mich.		9			35 40 43	
						Kay & Ess Co..... Dayton, Ohio	2 4 5 6 7 8	10 11 12 13 16		35 40 43	Milwax Co. New York, N. Y.	4 5 6	10 11 12			40 42	
Hammond-Boynton Paint & Chemical Co. Norwich, Conn.		9 12									Monterey Paint Co. Brooklyn, N. Y.		9			35	
Hascall Paint Co..... Cleveland, Ohio	2 5 6 7 8	9 11 12			40 43	Keller Paint Works..... Elmira, N. Y.	6	9 11 12			Moran & Co., Benjamin Brooklyn, N. Y.	6	9			35 40 43	
Hazard Lead Works..... Hazardville, Conn.	5	9 12 16			33 35 40 43	Keystone Albumen & Paint Co. Philadelphia, Pa.		9 12 16		40	Morgan Paint Co. Reading, Pa.		9			35 40 43	
Heath & Milligan Mfg. Co.... Chicago, Ill.	2 6 7 8	9 10 12 13 16			35 40 43	King & Co., William H..... New York, N. Y.	8	9 12 16		35 40 43						35 40	

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						Richmond Bros. Cincinnati, Ohio	5 6 8	9			33 35 40 43	Tarr & Wonsom. Gloucester, Mass.		12			
						Rinald Bros. Philadelphia, Pa.	1 6	12			35	Teredo-Proof Paint Co. New York, N. Y.		12 16			
Nashville Carbon & Oil Co. Nashville, Tenn.	7											Thomas Paint Co., A. H. Waverley, N. Y.	5 7	9 12 16			35 40
Nason & Co., R. N. San Francisco, Cal.	5 7	9 16			35 40 43												
						St. Louis Surfer & Paint Co. St. Louis, Mo.	5 6 7	9 12			35	Tredennick Paint Co., L. Meriden, Conn.	2 5 8	11 12 16			35 40
Neuchatel Asphalt Co. New York, N. Y.	5					St. Paul White Lead & Oil Co. St. Paul, Minn.	2 4 5 6 7	9 10 11 12 13			33 35 40 43	Trinidad Asphalt Mfg. Co. St. Louis, Mo.	2 5 6 7 8	10 11 13			
Northern Paint Co. St. Paul, Minn.	6 8	11			40 43	Schoelkopf, Hartford, Hanna Co. New York, N. Y.	7	12				Trussed Concrete Steel Co. Detroit, Mich.	5 6 8	9 10 12			35
						Semet-Solvay Co. Syracuse, N. Y.	7	12									
Otley Mfg. Co. Chicago, Ill.	5 7	9 12			33	Skyo Paint Mfg. Co. Lexington, Ky.	5 11 16	9 11 16			33 35 40 43	United States Graphite Co. Saginaw, Mich.	7	9 12			
Painting Machine Co. Chicago, Ill.			17			Smith & Co., J. Lee. New York, N. Y.	7	9				United States Paint Co. Williamsport, Pa.		11 12			
Parian Paint Co. Atlanta, Ga.	5 8				33 35 40 43	Sonneborn Sons, L., Inc. New York, N. Y.	6 7	9 12									
Parker, Preston & Co. Norwich, Conn.	6					Standard Oil Co. New York, N. Y.	2 5 6 8	10 11 13 16				Van Calvert Paint Co. St. Louis, Mo.	5	9			35 40 43
Patek Bros. Milwaukee, Wis.	8	9			33 35 40 43	Standard Paint Co. New York, N. Y.	2 5 6	10 11				Vaughan Paint Co. Cleveland, Ohio	2 5 6 7 8	10 12 13 16			35 40 43
Patent Vulcanite Roofing Co. Chicago, Ill.	6					Sterling Varnish Co. Pittsburgh, Pa.	7	12			43	Wadsworth, Howland & Co. Boston, Mass.	6	9 12 13			
Patton Paint Co. Milwaukee, Wis.	1 4 5 6 7 8	11 12 15 16			35 40 43	Stickney Color Co. Indianapolis, Ind.		12									
						Stockton Paint Co. Stockton, Cal.	5	9 12			35 40 43	Walker Chemical Works. Harrison, N. J.	5	11 16			40 43
Pearsall, M. R. New York, N. Y.	6	13				Stowell Mfg. Co. Jersey City, N. J.	6	11				Wetherill & Co., Geo. D., Inc. Philadelphia, Pa.	6	9 12			33 35 40 43
Phoenix Paint & Varnish Co. Philadelphia, Pa.	5	9 12			35 40 43	Suydam Co., M. B. Pittsburgh, Pa.	1 5 6 7 8	9 10 11 12			40						
Pittsburgh Wood Preserving Co. Pittsburgh, Pa.		11				Swift Paint Co. Cleveland, Ohio	6	12			33 40	Wiswall Paint Co. New York, N. Y.	7	9 12			35 40
												Wood Preserver Co., C. A. St. Louis, Mo.		16			
Rabok Mfg. Co. St. Louis, Mo.	7	12				Tallman Co. Tuloh, Ohio	2 5 6 7 8	9 12 16			33 35 40 43	Wyckoff Pipe & Creosoting Co., Inc. New York, N. Y.		16			
Rasmussen & Co. Portland, Ore.	5 6 8	9 10 11			33 35 40 43	Timm & Nollan Co. San Francisco, Cal.		10			43						
Reeves Co. New Orleans, La.	5	11 16			35	Torr Paint Co. Rockport, Mass.		11 16			40	Zipell Damp Resisting Paint Co. New York, N. Y.	6				
Riesenman Mfg. Co. Franklin, Pa.	2 5 4	9 12															

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Felton, Sibley & Co..... Philadelphia, Pa.	5	9 12			35 40 43							Kirby Paint Co., Geo. Jr.... New Bedford, Mass.		9 12 16			35 40 43
Flexol Co..... New York, N. Y.	6	12			43	Heppes Co..... Chicago, Ill.		11									
Ford Mfg. Co..... St. Paul, Minn.	6	11 13				Hetzel, J. C., Estate of.... Newark, N. J.	2 5 6 7	10 11 12 16			35						
Forest City Paint & Varnish Co. Cleveland, Ohio	5 6 7 8	9 12 13 16			35 40 43	Hoffman Paint & Varnish Co. Boston, Mass.	5 6	9 12			33 35 40 43	Lahey Co., A. L..... Kalamazoo, Mich.	4 5	9 11			35 40 43
Frazer Paint Co..... Detroit, Mich.		12			40	Horn, A. C..... New York, N. Y.	6	11 13			34 42	Lawrence & Co., W. W.... Pittsburgh, Pa.	2 6 7 8	9 12 16			33 35 40 43
French & Co., Samuel H.... Philadelphia, Pa.	5	9 16			33 35 40 43	Huff, W. H..... Beverly, N. J.		16				Lino Paint Co..... Collingwood, Ohio		11 12 13			35 40 43
Fuller & Co., W. P..... San Francisco, Cal.	2 5 6 7 8	9 11 12			35 40 43	Hutchinson Scott Co..... New York, N. Y.	6 8	10 12			35 40 43	Long Co., Charles R., Jr.... Louisville, Ky.	7	9 11 12			
						Hydro-Bar Waterproofing Co. New York, N. Y.	2 6	10 13									
Garrett & Son Co., C. S..... Philadelphia, Pa.		11				Illsley-Doubleday & Co..... New York, N. Y.		9			33	McClintock & Irvine Co.... Pittsburgh, Pa.	6	11			
General Roofing Mfg. Co.... E. St. Louis, Mo.	6	11			35	Indianapolis Chemical Co... Indianapolis, Ind.		14			41	McKinley, Perkins Co... Oakland, Cal.	2 5 6	9			35 40
Girvan-Nached Co..... New York, N. Y.	6	11			35	Indian Refining Co..... New York, N. Y.		16				McMurtry Mfg. Co..... Denver, Col.	5 6 8	9			40 43
Glidden Varnish Co..... Cleveland, Ohio	2 5 6 8	9 11 12 15 16			35 43	Insulite Chemical Co..... Aurora, Ill.	6	10 12									
Globe Asphalt Co..... Pittsburgh, Pa.	5					Jamestown Paint & Varnish Co. Jamestown, Pa.	2 4 5 6 7	9				Maire Paint Co..... Minneapolis, Minn.	1 6	10 11 12 16			33
Goheen Mfg. Co..... Canton, Ohio	7	12				Jenkins Paint & Oil Co.... Norfolk, Va.	6 7 8	9 12 13 16			33 35 40	Mamolith Carbon Paint Co... Cincinnati, Ohio	2 7 8				35
Good Products Co..... Chicago, Ill.	2 6 7	9 10 11 12 13										Marine Paint Corporation Norfolk, Va.	6	12 16			35 40 43
Gould Gibraltar Paint Co.... New York, N. Y.	4 6				40	Jones Paint Co..... Rome, N. Y.	7	9 11 12 16				Menzel & Son, William New York, N. Y.		16			
Grosche & Co., Bruno..... New York, N. Y.	6	16			41	Kay & Ess Co..... Dayton, Ohio	2 4 5 6 7 8	10 11 12 13 16			35 40 43	Mets Paint Co., P. A. Buffalo, N. Y.		9			35 40 43
Hammond-Boynton Paint & Chemical Co. Norwich, Conn.		9 12				Keystone Albumen & Paint Co. Philadelphia, Pa.		9 12 16			40	Michigan Paint Co. Flint, Mich.		9 11 12			35 40 43
Hascall Paint Co..... Cleveland, Ohio	2 5 6 7 8	9 11 12			40 43	Keller Paint Works..... Elmira, N. Y.	6	9 11 12				Minwax Co. New York, N. Y.	2 4 5	9 10 11			40 42
Hazard Lead Works..... Hazardville, Conn.	5	9 12 16			33 35 40 43	King & Co., William H..... New York, N. Y.	8	9 12 16			35 40 43	Morgan Paint Co. Rochester, N. Y.		9 11 12			35 40 43
Heath & Milligan Mfg. Co.... Chicago, Ill.	2 6 7 8	9 10 12 13 16			35 40 43												

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	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24
						Richmond Bros. Cincinnati, Ohio	5 6 8	9			33 35 40 43	Tarr & Wonson Gloucester, Mass.		12	
						Rinald Bros. Philadelphia, Pa.	1 6	12			35	Teredo-Proof Paint Co. New York, N. Y.		12 16	
Nashville Carbon & Oil Co. Nashville, Tenn.	7											Thomas Paint Co., A. H. Waverley, N. Y.	5 7	9 12 16	
Nason & Co., R. N. San Francisco, Cal.	5 7	9 16			35 40 43										
						St. Louis Surfer & Paint Co. St. Louis, Mo.	5 6 7	9 12			35	Tredennick Paint Co., L. Meriden, Conn.	2 5 8	11 12 16	
						St. Paul White Lead & Oil Co. St. Paul, Minn.	2 4 5 6 7	9 10 11 12 13			33 35 40 43	Trinidad Asphalt Mfg. Co. St. Louis, Mo.	2 5 6 7 8	10 11 13	
Neuchatel Asphalt Co. New York, N. Y.	5					Schoelkopf, Hartford, Hanna Co. New York, N. Y.	7	12				Trussed Concrete Steel Co. Detroit, Mich.	5 6 8	9 10 12	
Northern Paint Co. St. Paul, Minn.	6 8	11			40 43	Semet-Solvay Co. Syracuse, N. Y.	7	12							
						Skyo Paint Mfg. Co. Lexington, Ky.	5	9 11 16			33 35 40 43	United States Graphite Co. Saginaw, Mich.	7	9 12	
Otley Mfg. Co. Chicago, Ill.	5 7	9 12			33	Smith & Co., J. Lee. New York, N. Y.	7	9				United States Paint Co. Williamsport, Pa.		11 12	
Painting Machine Co. Chicago, Ill.			17			Sonneborn Sons, L., Inc. New York, N. Y.	6 7	9 12							
Parian Paint Co. Atlanta, Ga.	5 8				33 35 40 43	Standard Oil Co. New York, N. Y.	2 5 6 8	10 11 13 16				Van Calvert Paint Co. St. Louis, Mo.	5	9	
Parker, Preston & Co. Norwich, Conn.	6					Standard Paint Co. New York, N. Y.	2 5 6	10 11				Vaughan Paint Co. Cleveland, Ohio	2 5 6 7 8	10 12 13 16	
Patek Bros. Milwaukee, Wis.	8	9			33 35 40 43	Sterling Varnish Co. Pittsburgh, Pa.	7	12			43	Walsworth, Howland & Co. Boston, Mass.	6	9 12 13	
Patent Vulcanite Roofing Co. Chicago, Ill.	6					Stuckey Color Co. Indianapolis, Ind.		12							
Patton Paint Co. Milwaukee, Wis.	1 4 5 6 7 8	11 12 15 16			35 40 43	Stockton Paint Co. Stockton, Cal.	5	9 12			35 40 43	Walker Chemical Works. Harrison, N. J.	5	11 16	
Pearsall, M. R. New York, N. Y.	6	13				Stowell Mfg. Co. Jersey City, N. J.	6	11				Wetherill & Co., Geo. D., Inc. Philadelphia, Pa.	6	9 12	
Phoenix Paint & Varnish Co. Philadelphia, Pa.	5	9 12			35 40 43	Suydam Co., M. B. Pittsburgh, Pa.	1 5 6 7 8	9 10 11 12			40				
Pittsburgh Wood Preserving Co. Pittsburgh, Pa.		14				Swift Paint Co. Cleveland, Ohio	6	12			33 40	Wiswall Paint Co. New York, N. Y.	7	9 12	
												Wood Preserver Co., C. A. St. Louis, Mo.		16	
Rabok Mfg. Co. St. Louis, Mo.	7	12				Tallman Co. Cincinnati, Ohio	2 5 6 7 8	9 12 16			33 35 40 43	Wyckoff Pipe & Creosoting Co., Inc. New York, N. Y.		16	
Rasmussen & Co. Portland, Ore.	8 11				40 43	Tamm & Nolen Co. San Francisco, Cal.		10			43				
Reeves Co. New Orleans, La.	8 11 16				43	Tarr Paint Co. Rockport, Mass.		11 16			40				
Riesenman Mfg. Co. Franklin, Pa.	2 3 4	12										Zell Damp Resisting Paint Co. New York, N. Y.	6		

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						Richmond Bros. Cincinnati, Ohio	5 6 8	9			33 35 40 43	Tarr & Wonson. Gloucester, Mass.		12			
						Rinald Bros. Philadelphia, Pa.	1 6	12			35	Teredo-Proof Paint Co. New York, N. Y.		12 16			
Nashville Carbon & Oil Co. Nashville, Tenn.	7											Thomas Paint Co., A. H. Waverley, N. Y.	5 7	9 16			35 40
Nason & Co., R. N. San Francisco, Cal.	5 7	9 16			35 40 43							Tredennick Paint Co., L. Meriden, Conn.	2 5 8	11 12 16			35 40
						St. Louis Surfacers & Paint Co. St. Louis, Mo.	5 6 7	9 12			35	Trinidad Asphalt Mfg. Co. St. Louis, Mo.	2 5 6 7	10 11 13			
Neuchatel Asphalt Co. New York, N. Y.	5					St. Paul White Lead & Oil Co. St. Paul, Minn.	2 4 5 6 7	9 10 11 12 13			33 35 40 43	Trussed Concrete Steel Co. Detroit, Mich.	5 6 8	9 10 12			35
Northern Paint Co. St. Paul, Minn.	6 8	11			40 43	Schoelkopf, Hartford, Hanna Co. New York, N. Y.	7	12									
						Semet-Solvay Co. Syracuse, N. Y.	7	12									
						Skyo Paint Mfg. Co. Lexington, Ky.	5	9 11 16			33 35 40 43	United States Graphite Co. Saginaw, Mich.	7	9 12			
Otley Mfg. Co. Chicago, Ill.	5 7	9 12			33	Smith & Co., J. Lee. New York, N. Y.	7	9				United States Paint Co. Williamsport, Pa.		11 12			
Painting Machine Co. Chicago, Ill.			17														
Parian Paint Co. Atlanta, Ga.	5 8				33 35 40 43	Sonneborn Sons, L., Inc. New York, N. Y.	6 7	9 12				Van Calvert Paint Co. St. Louis, Mo.	5	9			35 40 43
Parker, Preston & Co. Norwich, Conn.	6					Standard Oil Co. New York, N. Y.	2 5 6 8	10 11 13 16				Vaughan Paint Co. Cleveland, Ohio	2 5 6 7 8	10 12 13 16			35 40 43
Patek Bros. Milwaukee, Wis.	8	9			33 35 40 43	Standard Paint Co. New York, N. Y.	2 5 6	10 11				Wa'sworth, Howland & Co. Boston, Mass.	6	9 12 13			
Patent Vulcanite Roofing Co. Chicago, Ill.	6					Sterling Varnish Co. Pittsburgh, Pa.	7	12			43						
Patton Paint Co. Milwaukee, Wis.	1 4 5 6 7 8	11 12 15 16			35 40 43	Stickney Color Co. Indianapolis, Ind.		12				Walker Chemical Works. Harrison, N. J.	5	11 16			40 43
Pearsall, M. R. New York, N. Y.	6	13				Stockton Paint Co. Stockton, Cal.	5	9 12			35 40 43	Wetherill & Co., Geo. D. Inc. Philadelphia, Pa.	6	9 12			33 35 40 43
Phoenix Paint & Varnish Co. Philadelphia, Pa.	5	9 12			35 40 43	Stowell Mfg. Co. Jersey City, N. J.	6	11									
						Suydam Co., M. B. Pittsburgh, Pa.	1 5 6 7 8	9 10 11 12			40						
Pittsburgh Wood Preserving Co. Pittsburgh, Pa.		14				Swift Paint Co. Cleveland, Ohio	6	12			33 40	Wiswall Paint Co. New York, N. Y.	7	9 12			35 40
												Wood Preserver Co., C. A. St. Louis, Mo.		16			
Rabok Mfg. Co. St. Louis, Mo.	7	12				Tallman Co. Tolado, Ohio	2 5 6 7 8	9 12 16			33 35 40 43	Wyckoff Pipe & Creosoting Co., Inc. New York, N. Y.		16			
Rasmussen & Co. Portland, Ore.	7 8	9 10 11			35 40 43	Tamm & Nolan Co. San Francisco, Cal.		10			43						
Reeves Co. New Orleans, La.	5	11 16			43	Tarr Paint Co. Rockport, Mass.		11 16			40						
Riesenman Mfg. Co. Franklin, Pa.	2 3 4	9 12										Well-Damo Resisting Paint Co. New York, N. Y.	6				

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
Felton, Sibley & Co..... Philadelphia, Pa.	5	9 12			35 40 43							Kirby Paint Co., Geo. Jr., New Bedford, Mass.		9 12 16			35 40 43
Flexol Co..... New York, N. Y.	6	12			43	Heppes Co..... Chicago, Ill.		11									
Ford Mfg. Co..... St. Paul, Minn.	6	11 13				Hetzel, J. C., Estate of..... Newark, N. J.	2 5 6 7	10 11 12 16			35						
Forest City Paint & Varnish Co. Cleveland, Ohio	5 6 7 8	9 12 13 16			35 40 43	Hoffman Paint & Varnish Co. Boston, Mass.	5 6	9 12			33 35 40 43	Lahey Co., A. L..... Kalamazoo, Mich.	4 5	9 11			35 40 43
Frazer Paint Co..... Detroit, Mich.		12			40	Horn, A. C..... New York, N. Y.	6	11 13			34 42	Lawrence & Co., W. W.... Pittsburgh, Pa.	2 6 7 8	9 12 16			33 35 40 43
French & Co., Samuel H..... Philadelphia, Pa.	5	9 16			33 35 40 43	Huff, W. H..... Beverly, N. J.		16				Lino Paint Co..... Collingwood, Ohio		11 12 13			35 40 43
Fuller & Co., W. P..... San Francisco, Cal.	2 5 6 7 8	9 11 12			35 40 43	Hutchinson Scott Co..... New York, N. Y.	6 8	10 12			35 40 43	Long Co., Charles R., Jr.... Louisville, Ky.	7	9 11 12			
						Hydro-Bar Waterproofing Co. New York, N. Y.	2 6	10 13									
Garrett & Son Co., C. S..... Philadelphia, Pa.		11				Illsley-Doubleday & Co..... New York, N. Y.		9			33	McClintock & Irvine Co.... Pittsburgh, Pa.	6	11			
General Roofing Mfg. Co.... E. St. Louis, Mo.	6	11			35	Indianapolis Chemical Co... Indianapolis, Ind.		14			41	McKinley, Perkins Co.... Oakland, Cal.	2 5 6	9			35 40
Girvan-Nachod Co..... New York, N. Y.	6	11			35	Indian Refining Co..... New York, N. Y.		16				McMurtry Mfg. Co., (Inc.) Denver, Col.	5 6 8	9			40 43
Glidden Varnish Co..... Cleveland, Ohio	2 5 6 8	9 11 12 15 16			35 43	Insulite Chemical Co..... Aurora, Ill.	6	10 12									
Globe Asphalt Co..... Pittsburgh, Pa.	5					Jamestown Paint & Varnish Co. Jamestown, Pa.	2 4 5 6 7	9				Maire Paint Co..... Minneapolis, Minn.	1 6	10 11 12 16			33
Goheen Mfg. Co..... Canton, Ohio	7	12				Jenkins Paint & Oil Co..... Norfolk, Va.	6 7 8	9 12 13 16			33 35 40	Mamolith Carbon Paint Co Cincinnati, Ohio	2 7 8				35
Good Products Co..... Chicago, Ill.	2 6 7	9 10 11 12 13				Jones Paint Co..... Rome, N. Y.	7	9 11 12 16				Marine Paint Corporation Norfolk, Va.	6	12 16			35 40 43
Gould Gibraltar Paint Co.... New York, N. Y.	4 6				40	Kay & Ess Co..... Dayton, Ohio	2 4 5 6 7 8	10 11 12 13 16			37 40 41	Menzel & Son, William New York, N. Y.		16			
Grosche & Co., Bruno..... New York, N. Y.	6	16			41	Keller Paint Works..... Elmira, N. Y.	6	9 11 12				Mets Paint Co., P. A. Buffalo, N. Y.		9			35 40 43
Hammond-Boynton Paint & Chemical Co. Norwich, Conn.		9 12				Keystone Albumen & Paint Co. Philadelphia, Pa.		9 12 16			40	Midway Paint Co. Flint, Mich.		9 11 12			35 40 43
Hascall Paint Co..... Cleveland, Ohio	2 5 6 7 8	9 11 12			40 43	King & Co., William H..... New York, N. Y.	8	9 12 16			37 40 43	Milwax Co. New York, N. Y.	2 4	10 12			40 42
Hazard Lead Works..... Hazardville, Conn.	5	9 12 16			33 35 40 43							Morgan Paint Co. Baltimore, Pa.		10 16			33 35 40 43
Heath & Milligan Mfg. Co.... Chicago, Ill.	2 6 7 8	9 10 12 13 16			35 40 43												

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
						Richmond Bros. Cincinnati, Ohio	5 6 8	9			33 35 40 43	Tarr & Wanson. Gloucester, Mass.		12			
						Rinald Bros. Philadelphia, Pa.	1 6	12			35	Teredo-Proof Paint Co. New York, N. Y.		12 16			
Nashville Carbon & Oil Co. Nashville, Tenn.	7											Thomas Paint Co., A. H. Waverley, N. Y.	5 7	9 12 16			35 40
Nason & Co., R. N. San Francisco, Cal.	5 7	9 16			35 40 43												
						St. Louis Surfacers & Paint Co. St. Louis, Mo.	5 6 7	9 12			35	Tredennick Paint Co., L. Meriden, Conn.	2 5 8	11 12 16			35 40
Neuchatel Asphalt Co. New York, N. Y.	5					St. Paul White Lead & Oil Co. St. Paul, Minn.	2 4 5 6 7	9 10 11 12 13			33 35 40 43	Trinidad Asphalt Mfg. Co. St. Louis, Mo.	2 5 6 7 8	10 11 13			
Northern Paint Co. St. Paul, Minn.	6 8	11			40 43	Schoelkopf, Hartford, Hanna Co. New York, N. Y.	7	12				Trussed Concrete Steel Co. Detroit, Mich.	5 6 8	9 10 12			35
						Semet-Solvay Co. Syracuse, N. Y.	7	12									
Otley Mfg. Co. Chicago, Ill.	5 7	9 12			33	Skyo Paint Mfg. Co. Lexington, Ky.	5 11 16	9			33 35 40 43	United States Graphite Co. Saginaw, Mich.	7	9 12			
Painting Machine Co. Chicago, Ill.			17									United States Paint Co. Williamsport, Pa.		11 12			
Parian Paint Co. Atlanta, Ga.	5 8				33 35 40 43	Smith & Co., J. Lee. New York, N. Y.	7	9									
Parker, Preston & Co. Norwich, Conn.	6					Sonneborn Sons, L., Inc. New York, N. Y.	6 7	9 12				Van Calvert Paint Co. St. Louis, Mo.	5	9			35 40 43
Patek Bros. Milwaukee, Wis.	8	9			33 35 40 43	Standard Oil Co. New York, N. Y.	2 5 6 8	10 11 13 16				Vaughan Paint Co. Cleveland, Ohio	2 5 6 7 8	10 12 13 16			35 40 43
Patent Vulcanite Roofing Co. Chicago, Ill.	6					Standard Paint Co. New York, N. Y.	2 5 6	10 11									
Patton Paint Co. Milwaukee, Wis.	1 4 5 6 7 8	11 12 15 16			35 40 43	Sterling Varnish Co. Pittsburgh, Pa.	7	12			43	Wa'sworth, Howland & Co. Boston, Mass.	6	9 12 13			
						Stickney Color Co. Indianapolis, Ind.		12									
Pearsall, M. R. New York, N. Y.	6	13				Stockton Paint Co. Stockton, Cal.	5	9 12			35 40 43	Walker Chemical Works. Harrison, N. J.	5	11 16			40 43
Phoenix Paint & Varnish Co. Philadelphia, Pa.	5	9 12			35 40 43	Stowell Mfg. Co. Jersey City, N. J.	6	11				Wetherill & Co., Geo. D., Inc. Philadelphia, Pa.	6	9 12			33 35 40 43
Pittsburgh Wood Preserving Co. Pittsburgh, Pa.		14				Suydam Co., M. B. Pittsburgh, Pa.	1 5 6 7 8	9 10 11 12			40						
						Swift Paint Co. Cleveland, Ohio	6	12			33 40						
												Wiswall Paint Co. New York, N. Y.	7	9 12			35 40
Rabok Mfg. Co. St. Louis, Mo.	7	12				Tallman Co. Toledo, Ohio	2 5 6 7 8	9 12 16				Wood Preserver Co., C. A. St. Louis, Mo.		16			
Rasmussen & Co. Portland, Ore.	4 6 8	9 10 11			33 35	Tamm & Nader Co. San Francisco, Cal.		10			43	Wyckoff Pipe & Creosoting Co., Inc. New York, N. Y.		16			
Reeves Co. New Orleans, La.		11 16				Farr Paint Co. Rockport, Mass.		11 16			40						
Riesenman Mfg. Co. Franklin, Pa.	2 3 4	9 12										Zeppell Damp Resisting Paint New York, N. Y.	6				

CLASSIFICATION PAGE OF
SECTION 5

Technical Paints and Preservative Coatings

(Standard Paints, Varnishes, etc. see Section 39)

Section Synopsis

Dampproofing, Fire-resistant, Acidproof and Metal-protective Paints or Coatings; Graphite, and Graphite Paint; Composition Roof Coatings; Wood Preservatives; Cement-Floor Dustproofers;

Stone Preservatives and Renovators; Wood Fireproofing; Timber and Lumber Creosoting; Insulating Paint

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX		TRADE NAMES AND BRANDS	Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
					1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
REGULAR CLASSIFICATION									
1	Graphite, material	"Amalgam," paint, iron "Velveta," brick and cement coating } S. 39 B, Catalog 2	4	American Bitumastic Enamels Co. Philadelphia, Pa.	2	12			
2	Ready-mixed paints:—				3				
3	Acidproof, paints, enamels	"Antakwa," dampproofing coatings, protective metal paint, S. 4, Catalog 1							
4	Alkaliproof, paints, enamels	"Avenarius Carbolineum," wood preservative, Catalog 6							
5	Asbestos, fireproof	"Bitumastic," metal enamels, and coatings, Catalog 4							
6	Asphaltum, iron	"Carbonneale," metal paint, S. 43 A, Catalog 2	6	Carbolineum Wood Preserving Co. New York, N. Y.	15	17			
7	Brick and cement work, dampproofing	"De-Co," varnishes, wood finishes, enamels, cement paint, and filler } Catalog 2							
8	Carbon paints	"Eureka," metal paint, water-proofing paint, etc.	2	Debevoise Company, The Brooklyn, N. Y.	6	12			35
9	Cement floor dustproofers, fillers	"Dextrolite," wall enamel			8	13			36
10	Graphite, iron paint	"Petrifax," wall enamel							42
11	Insulating paint, electrical work	"Petrifax Calx," dampproofing coating } Catalog 5	5	Dexter Brothers Co. Boston, Mass.	6				35
12	Roof waterproofers, renovating	"Roman Calx," interior oil finish			8				36
13	Special metal protective and marine	"Edinburgh," mortar colors							41
14	Stone preservatives, renovating	"Everlite Koating," enamel paint	1	Dixon Crucible Co., Joseph Jersey City, N. J.		9			
15	Timber and lumber creosoting	"Liquid Konkerit," cement paint							
16	Wood fireproofers	"R.I.W.," line of paints and compounds } Catalog 3							
17	Wood preservatives	"Tockolith," cement paint	2	Eureka Chemical Company of New Jersey, The Brooklyn, N. Y.	6	12			35
	Wood preserving outfits	"Toxement," waterproofing compound			8	13			36
		"Toxolopore," dampproofing paint							42
		"Verte Antique," copper stain							43
		"Wonder-Koat," interior enamel							
		"Granolith," brick and cement coating, S. 39 D, Catalog 3	4	Hermiston & Son James, Philadelphia, Pa.	2	12			
		"Hildrolite," brick and cement coating, S. 39 D, Catalog 2			3				
		"I.D.P.," dampproofing coatings and protective metal paint } S. 4, Catalog 2							
		"I.D.P. Art-o-fin," dampproofing wall coatings, cement-floor dustproofers and structural iron paint							
		"J-M," concrete primer } S. 26 B, Catalog 8							
		"J-M," liquid water-proof coating							
		"National XX," graphite paint } S. 26 B, Catalog 3	3	Toch Brothers New York, N. Y.	2	13			34
		"Retaw," waterproofing paint			3				35
		"Silica-Graphite," iron paint, Catalog 1			6				37
		"Tunaloid," dampproofing, S. 26 B, Catalog 5			8				38
									39
									42
									44
SPECIAL CLASSIFICATION									
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.									
33	Calcimines and cold-water paints (S. 39 D)								
34	Cement and concrete admixtures (S. 4)								
35	Enamel paint (S. 39 B)								
36	Flat wall finish (S. 39 D)								
37	Membrane waterproofing (S. 4)								
38	Mortar colors (S. 39 A)								
39	Plaster bond, wall coating under plastering (S. 4)								
40	Ready-mixed interior and exterior standard paints and materials for same (S. 39 A & B)								
41	Shingle stains (S. 39 C)								
42	Stone coating, stain preventive (S. 4)								
43	Varnish, hard-oil finish, fillers, japans, stains, wax polish, etc. (S. 39 C)								
44	Verdigris stain, copper effect (S. 39 C)								

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
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Felton, Sibley & Co..... Philadelphia, Pa.	5	9 12			35 40 43							Kirby Paint Co., Geo. Jr.,... New Bedford, Mass.		9 12 16			35 40 43
Flexol Co..... New York, N. Y.	6	12			43	Heppes Co..... Chicago, Ill.		11									
Ford Mfg. Co..... St. Paul, Minn.	6	11 13				Hetzel, J. C., Estate of..... Newark, N. J.	2 5 6 7	10 11 12 16			35						
Forest City Paint & Varnish Co. Cleveland, Ohio	5 6 7 8	9 12 13 16			35 40 43	Hoffman Paint & Varnish Co. Boston, Mass.	5 6	9 12			33 35 40 43	Lahey Co., A. L. Kalamazoo, Mich.	4 5	9 11			35 40 43
Frazer Paint Co..... Detroit, Mich.		12			40	Horn, A. C..... New York, N. Y.	6	11 13			34 42	Lawrence & Co., W. W.... Pittsburgh, Pa.	2 6 7 8	9 12 16			33 35 40 43
French & Co., Samuel H..... Philadelphia, Pa.	5	9 16			33 35 40 43	Huff, W. H..... Beverly, N. J.		16				Lino Paint Co..... Collingwood, Ohio		11 13			35 40 43
Fuller & Co., W. P..... San Francisco, Cal.	2 5 6 7 8	9 11 12			35 40 43	Hutchinson Scott Co..... New York, N. Y.	6 8	10 12			35 40 43	Long Co., Charles R., Jr.... Louisville, Ky.	7	9 11 12			
						Hydro-Bar Waterproofing Co. New York, N. Y.	2 6	10 13									
Garrett & Son Co., C. S..... Philadelphia, Pa.		11				Illsley-Doubleday & Co..... New York, N. Y.		9			33	McClintock & Irvine Co..... Pittsburgh, Pa.	6	11			
General Roofing Mfg. Co.... E. St. Louis, Mo.	6	11				Indianapolis Chemical Co... Indianapolis, Ind.		14			41	McKinley, Perkins Co.... Oakland, Cal.	2 5 6	9			35 40
Girvan-Nachod Co..... New York, N. Y.	6	11			35	Indian Refining Co..... New York, N. Y.		16				McMurtry Mfg. Co..... Denver, Col.	5 6 8	9			40 43
Glidden Varnish Co..... Cleveland, Ohio	2 5 6 8	9 11 12 15 16			35 43	Insulite Chemical Co..... Aurora, Ill.	6	10 12									
Globe Asphalt Co..... Pittsburgh, Pa.	5					Jamestown Paint & Varnish Co. Jamestown, Pa.	2 4 5 6 7	9				Maire Paint Co..... Minneapolis, Minn.	1 6	10 11 12 16			33
Goheen Mfg. Co..... Canton, Ohio	7	12				Jenkins Paint & Oil Co..... Norfolk, Va.	6 7 8	9 12 13 16			43 35 40	Mamolith Carbon Paint Co Cincinnati, Ohio	2 7 8				35
Good Products Co..... Chicago, Ill.	2 6 7	9 10 11 12 13				Jones Paint Co..... Rome, N. Y.	7	9 11 12 16				Marine Paint Corporation Norfolk, Va.	6	12 16			35 40 43
Gould Gibraltar Paint Co.... New York, N. Y.	4 6				40	Kay & Ess Co..... Dayton, Ohio	2 4 5 6 7 8	10 11 12 13 16			35 40 43	Menzel & Son, William New York, N. Y.		16			
Grosche & Co., Bruno..... New York, N. Y.	6	16			41	Keller Paint Works..... Elmira, N. Y.	6	9 11 12				Mets Paint Co., P. A. Buffalo, N. Y.		9			35 40 43
Hammond-Boynton Paint & Chemical Co. Norwich, Conn.		9 12				Keystone Albumen & Paint Co. Philadelphia, Pa.		10 12 16			40	Mihugar, Paint Co. Flint, Mich.		11 12			35 40 43
Hascall Paint Co..... Cleveland, Ohio	2 5 6 7 8	9 11 12			40 43	King & Co., William H.... New York, N. Y.	8	9 12 16			35 40 43	Minwax Co. New York, N. Y.	2 4	10 12			40 42
Hazard Lead Works..... Hazardville, Conn.	5	9 12 16			33 35 40 43							Montrose Paint Mfg. Co. Brooklyn, N. Y.					35
Heath & Milligan Mfg. Co.... Chicago, Ill.	2 6 7 8	9 10 12 13 16			35 40 43							Moon & Co., Benjamin Brooklyn, N. Y.		10			33 40 43
												Morgan Paint Co. Reading, Pa.		10			33 40 43
												Morse & Co., J. C. Cincinnati, Ohio		12			33 35 40

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32
						Richmond Bros..... Cincinnati, Ohio	5 6 8	9			33 35 40 43	Tarr & Wonson..... Gloucester, Mass.		12		
						Rinald Bros..... Philadelphia, Pa.	1 6	12			35	Teredo-Proof Paint Co..... New York, N. Y.		12 16		
Nashville Carbon & Oil Co... Nashville, Tenn.	7											Thomas Paint Co., A. H..... Waverley, N. Y.	5 7	9 12 16		
Nason & Co., R. N..... San Francisco, Cal.	5 7	9 16			35 40 43							Tredennick Paint Co., L..... Meriden, Conn.	2 5 8	11 12 16		
						St. Louis Surfacers & Paint Co. St. Louis, Mo.	5 6 7	9 12			35	Trinidad Asphalt Mfg. Co.... St. Louis, Mo.	2 5 6 7 8	10 11 13		
Neuchatel Asphalt Co..... New York, N. Y.	5					St. Paul White Lead & Oil Co. St. Paul, Minn.	2 4 5 6 7 8	9 10 11 12 13 15 16			33 35 40 43	Trussed Concrete Steel Co... Detroit, Mich.	5 6 8	9 10 12		
Northern Paint Co..... St. Paul, Minn.	6 8	11			40 43	Schoelkopf, Hartford, Hanna Co. New York, N. Y.	7	12								
						Semet-Solvay Co..... Syracuse, N. Y.	7	12								
Otley Mfg. Co..... Chicago, Ill.	5 7	9 12			33	Skyo Paint Mfg. Co..... Lexington, Ky.	5 11 16	9			33 35 40 43	United States Graphite Co... Saginaw, Mich.	7	9 12		
Painting Machine Co..... Chicago, Ill.			17			Smith & Co., J. Lee..... New York, N. Y.	7	9				United States Paint Co..... Williamsport, Pa.		11 12		
Parian Paint Co..... Atlanta, Ga.	5 8				33 35 40 43	Sonneborn Sons, L., Inc.... New York, N. Y.	6 7	9 12								
Parker, Preston & Co..... Norwich, Conn.	6					Standard Oil Co..... New York, N. Y.	2 5 6 8	10 11 13 16				Van Calvert Paint Co..... St. Louis, Mo.	5	9		
Patek Bros..... Milwaukee, Wis.	8	9			33 35 40 43	Standard Paint Co..... New York, N. Y.	2 5 6	10 11				Vaughan Paint Co..... Cleveland, Ohio	2 5 6 7 8	10 12 13 16		
Patent Vulcanite Roofing Co., Chicago, Ill.	6					Sterling Varnish Co..... Pittsburgh, Pa.	7	12			43	Washworth, Howland & Co.. Boston, Mass.	6	9 12 13		
Patton Paint Co..... Milwaukee, Wis.	1 4 5 6 7 8	11 12 15 16			35 40 43	Stickney Color Co..... Indianapolis, Ind.		12								
						Stockton Paint Co..... Stockton, Cal.	5	9 12			35 40 43	Walker Chemical Works.... Harrison, N. J.	5	11 16		
Pearson, M. R..... New York, N. Y.	6	13				Stowell Mfg. Co..... Jersey City, N. J.	6	11				Wetherill & Co., Geo. D.. Inc. Philadelphia, Pa.	6	9 12		
Phoenix Paint & Varnish Co. Philadelphia, Pa.	5	9 12			35 40 43	Suydam Co., M. B..... Pittsburgh, Pa.	1 5 6 7 8	9 10 11 12			40					
Pittsburgh Wood Preserving Co. Pittsburgh, Pa.		14				Swift Paint Co..... Cleveland, Ohio	6	12			33 40					
												Wiswall Paint Co..... New York, N. Y.	7	9 12		
Rabok Mfg. Co..... St. Louis, Mo.	7	12				Tallman Co..... Toledo, Ohio	2 5 6 7 8	9 12 16			33 35 40 43	Wood Preserver Co., C. A.... St. Louis, Mo.		16		
Rasmussen & Co..... Portland, Ore.	5 6 8	9 10 11			33 35 40 43	Tamm & Nolan Co..... San Francisco, Cal.		10			43	Wyckoff Pipe & Creosoting Co., Inc. New York, N. Y.		16		
Reeves Co..... New Orleans, La.	5	11 16			35	Tarr Paint Co..... Rockport, Mass.		11 16			40					
Rieserman Mfg. Co..... Franklin, Pa.	2 3 4	9 12										Zibell Damp Resisting Paint Co. New York, N. Y.	6			

"A.B.C." SYSTEMS

Joseph Dixon Crucible Co.



Miners, Importers and Manufacturers of Graphite,
Plumbago and Black Lead

JERSEY CITY, N. J.

NEW YORK
ST. LOUIS

PHILADELPHIA
PITTSBURGH

CHICAGO
BUFFALO

SAN FRANCISCO
BALTIMORE

BOSTON
ATLANTA

PRODUCT—DIXON'S SILICA-GRAPHITE PAINT

TECHNICAL DESCRIPTION—The particular advantage and peculiar efficiency of Dixon's Silica-Graphite Paint is due chiefly to the pigment, silica-graphite. This pigment is wholly inert; is unaffected by acids or alkalies, heat or cold—is practically indestructible in itself. The vehicle for Dixon's Silica-Graphite Paint is pure double-boiled linseed oil. This paint spreads easily, covers well and adheres tenaciously. Since no chemical action occurs between the pigment and vehicle the paint is left to dry by natural oxidation, the result being a tough, durable coating.

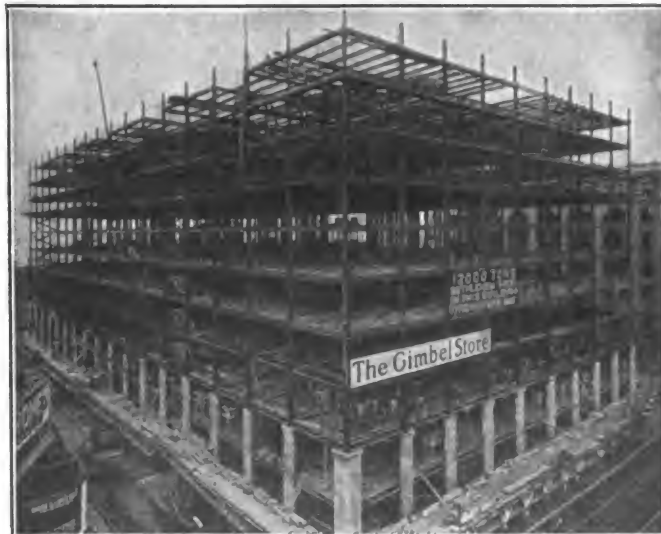
red. Parts that are to be in contact and will be enclosed shall receive, before assembling, a coat of the same material.

AFTER ERECTION—Places damaged by abrasion shall first be retouched. The entire work shall then be given a second coat of Dixon's Silica-Graphite Paint, of a different color than the mill coat.

The top of the package to be removed and the paint properly stirred. **NO ADULTERATING OILS OR THINNERS SHALL BE USED.** The cleaning, painting and materials to be subject to inspection.

The paint to be furnished to the mill and building site in original packages, ready mixed for use, as manufactured by the **JOSEPH DIXON CRUCIBLE COMPANY.**

QUALITY—Dixon's Silica-Graphite Paint is manufactured in but one quality, so that the architect and builder are protected against the substitution of cheaper grades when Dixon's is specified.



DIXON'S SILICA-GRAPHITE PAINT has made endurance records in all parts of the country on a variety of structures exposed to a variety of destructive elements.

HOW TO SPECIFY Dixon's Silica-Graphite Paint for construction work:

AT THE MILL—Before painting, all surfaces must be thoroughly cleaned of loose scale, dirt and moisture. The entire surface shall then be given a well-applied coating of Dixon's Silica-Graphite Paint, dark

COLORS—It is made in four dignified colors: Olive Green; Natural or Graphite Gray; Dark Red, and Black.

Write for "Philosophy of Protective Paint" and additional information.

REFERENCES. Dixon's is very widely used on the steel work of large buildings throughout the country. It protects such notable structures as the McAdoo Terminal Buildings, Gimbel Department Store, Hewitt-Brice Building, Ritz-Carlton Hotel and the American Woolen Company Building, in New York City.

Write for the long list of "Notable Buildings Protected with Dixon's Silica-Graphite Paint."

"A.B.C." SYSTEMS

The Eureka Chemical Company of New Jersey

Manufacturers of

Eureka Metal Paints, Technical Paints, Varnishes

THE DEBEVOISE COMPANY, SELLING AGENTS

GRAND STREET AND MORGAN AVENUE
BROOKLYN, N. Y.

PRODUCTS—"EUREKA" METAL PAINTS; "EUREKA" DAMP-PROOF PAINTS; "EUREKA" FLAT WALL FINISH; SPECIAL ENAMELS; EXTERIOR AND INTERIOR SPAR VARNISH; VARNISH for Floors and Wood-Finishing; CEMENT PAINT

EUREKA METAL PAINT—This product is a priming and finishing coating for Steel and Iron of all Kinds. On the market successfully for nineteen years with a continually growing reputation.

The paint is the union of pigment with the very best grade of linseed oil, treated by a special process which prolongs its life far beyond that of the natural oil.

This treated oil, when applied alone to metal, has successfully withstood exposure to the weather for three years, while ordinary linseed oil so applied finds its limit of endurance within six months.

With this oil we combine the highest grades of standard pigments—oxide of iron, graphite, carbon black, lead and zinc.

STANDARD COLORS—Red, Black, Green and Brown.

PRACTICAL TESTS AS EVIDENCE—U. S. NAVY—The Bureau of Construction and Repair have tested, approved, and are now using Eureka Metal Paint as a priming coat in place of red lead. A Test was made by applying six or eight different paints in the bottom or bilge of a steel coal barge (where the impurities of the soft coal were washed down into the water in which the paints were partly submerged), and after allowing the test to stand for over two years Eureka Metal Paint was found to be in far better condition than red lead or any of the other paints tried.

STEEL BUILDING TEST—A foundation protected with Eureka Metal Paint for eleven years was found to be in perfect condition, as shown in editorials from the Engineering News, issues of July 19th and 26th, 1906:

"A REMARKABLY GOOD RECORD FOR PAINT applied to a steel structure to preserve it from corrosion was recently uncovered in the course of repairs on the Lawyers' Title Insurance Co.'s Building, 37-39 Liberty St., New York City. The columns of this building rest on plate girders which were painted with Eureka Paint. After the building was completed it was found that these girders were submerged in water about 2 inches, and some apprehension was felt as to their durability. This condition continued for about three years, when the water level was lowered and for the last seven years the girders have been practically dry.

"When these girders were uncovered recently, according to statements made to us by the engineer in charge, the paint was found bright and in first-class condition, and upon scraping the paint off the steel was left clean and showed no trace of corrosion."

Clipping from issue of July 26th:

"In the article entitled 'A Remarkably Good Record for Paint,' which appeared in our issue of July 19, p. 70, the building undergoing repairs was stated, through a misunderstanding, to be the Lawyers' Title Insurance Co.'s Building, 37-39 Liberty St., New York City. The engineer in charge of the work informs us that the building was one in the next street, the Fahys Building, 54 Maiden Lane."

HOW TO SPECIFY—"The paint to be used for the work as herein described is to be Eureka Metal Paint, made by the Eureka Chemical Company, Brooklyn, N. Y."

EUREKA DAMPPROOF PAINT—For dampproofing walls of brick, stone or cement.

No. 50—Is a slow-drying paint for use in dampproofing interior walls of buildings.

No. 60—Is medium-drying for use in backing-up stone work or for use on structural work below street level.

No. 70—Quick-drying. Principally adaptable for the final field coat for structural steel work above street level where it is to be enclosed in cement, brick or stone work.

EUREKA FLAT WALL FINISH—For interior walls, woodwork and metal. This is a washable flat oil paint, smooth, hard, sanitary and permanent. It is made in white, and the painter can tint it as required by using colors in oil; or special colors can be obtained by arrangement with its manufacturers.

When applied to walls, interior woodwork or metal ceilings it gives a rich dead flat-finish.

A damp cloth removes finger marks and cleans the paint without affecting the coating.

As an undercoat for enamels it has no equal. Under some conditions one coat would be sufficient. Surfaces which have been painted require no further preparation.

SPECIFICATION SUGGESTIONS

DE-CO DURABLE SPAR VARNISH—uniform for outside work of all kinds.

DE-CO INTERIOR WOOD FINISH—a high-grade varnish for interior use.

DE-CO EXTRA FLOOR VARNISH—a perfect floor varnish; will not crack or powder or turn white when wet with water.

DE-CO LIGHT-OIL WOOD FINISH—an excellent grade of light-color cabinet varnish.

DE-CO INTERIOR ENAMELS—for high-class enamel finish.

DE-CO MILL ENAMEL—for mill or factory use.

DE-CO CREAMERY ENAMEL—a moistureproof sanitary finish.

DE-CO CEMENT PAINT—in colors or transparent; a coating for cement floors or for exterior finish on cement walls.

DE-CO CEMENT FILLER—for filling the cement floors before using the cement paint.

Special and Standard Paints and Varnishes for Corporation Work, Railroads and Steamships.



All our Specialties of equal high merit with Eureka Metal Paint.

Toch Brothers

Inventors and Manufacturers of

Technical and Scientific Paints, Enamels, Varnishes, Colors,
Dampproof and Waterproof Paints and Compounds, etc.

ESTABLISHED 1848

320 FIFTH AVENUE
NEW YORK, N. Y.

Works
LONG ISLAND CITY, N. Y.
TORONTO, ONT., CANADA

Distributing Agencies in the Principal Cities of the United States and Canada.

DAMPPROOFING

Walls Above Grade (Interior)

"R. I. W." No. 232—A non-saponifiable bituminous compound, similar to a liquid gutta percha, for application to the interior of exterior walls to which plaster is to be directly applied. Saves the cost of furring and lathing, and renders walls to which it is applied verminproof, moistureproof and stainproof.

Walls Below Grade (Exterior)

"R. I. W." MARINE CEMENT—Should be used in connection with waterproof felt paper for dampproofing foundation walls.

Walls Above Grade (Exterior)

"LIQUID KONKERIT" (Patented)—A cement paint, ready for use, for dampproofing and beautifying brick, stone, cement or concrete walls.

Walls Above Grade (Exterior)

"TOXLOXPORE" (Copyrighted)—A colorless liquid to be applied to brick, stone, cement or concrete construction. It dampproofs and stainproofs almost immediately.

WATERPROOFING AGAINST PRESSURE

Foundation Walls, Boiler and Elevator Pits, Reservoirs, etc.

"TOXEMENT" (Patented)—A chemical compound, in powder form, which, when used in the proportion of 2% of the amount of Neat Portland Cement in the cement mortar or concrete, will produce watertight results.

CEMENT FLOOR COATINGS

"CEMENT FILLER" AND "CEMENT FLOOR PAINT" (Patented)—First and second coatings for concrete floors. Decorate in any desired shade, and at the same time absolutely overcome the dusting of the cement. The first and best Cement Floor Paint. Thousands of references.

STAINPROOFING

Granite, Marble, Etc.

"R. I. W." No. 110—This material is intended for the backing of limestone, granite, marble and all cut stone, to prevent stain and exclude dampness. When "R. I. W." No. 110 is used it is unnecessary to use non-staining cements.

ENAMEL PAINTS

"EVERLITE KOATING"—A semi-enamel paint which has an appearance similar to a high-gloss enamel. Is used on wood, plaster, concrete, brick or metal.

"SNOW WHITE ENAMEL"—This is an easy-flowing, heavy-bodied white enamel for all interior purposes. Will rub and polish.

"WONDER-KOAT ENAMEL"—This enamel is flexible, waterproof and elastic, and presents a satin-like surface which does not collect dust.

"HOSPITAL AND LABORATORY ENAMEL"—This enamel is proof against sulphur, acid, water and fumes, and is largely used in chemical laboratories, hospitals, breweries, factories and private dwellings.

"A.B.C." SYSTEMS

R. I. W.

For Corroded Copper Effect

OUR "VERTE ANTIQUE"—A pure copper product made in two qualities, one for interior and the other for exterior use. It can be applied to metal or wood with a rag, sponge, brush or stippler, to produce the corroded copper effect which is so much desired.

"EDINBURGH" MORTAR COLORS, DRY CEMENT COLORS, AND PLASTER COLORS

MORTAR COLORS—We were the originators of cement colors, mortar colors and plaster colors, and make a large variety which are permanent in either lime or cement mortar.

STEEL PROTECTION

Against Corrosion or Electrolytic Action

"TOCKOLITH" (Patented)—A cement paint, ready for use, for the priming coat on iron, steel or metal. Prevents chemical or electrolytic corrosion. This material should always be second-coated with one of our Structural Steel, Bridge or "R. I. W." Damp-Resisting Paints, the finish coat depending upon the conditions to which the steel or metal will be subjected.

"R. I. W." No. 110—This material is recommended for the second coat on grillage and foundation beams because of its insulating properties.

"R. I. W." No. 112—This material is recommended for the second coat on structural steel work above the street level. This is similar to "R. I. W." No. 110, but has the additional quality of withstanding exposure to the elements during erection.

"R. I. W." No. 49—This paint, when used over "Tockolith," furnishes a perfect protection against the action of locomotive gases, acids and other fumes to which railroad bridges and viaducts are subjected.

"R. I. W." No. 44—An acidproof paint that is especially adapted for use on the interior of tanks of either metal or wood.

"R. I. W." No. 137—A bright red paint which is largely used for exterior work, such as tin roofs, cornices, fire escapes, etc. Is also used in chemical manufactories as a coating for steel to prevent disintegration from acid fumes.

"R. I. W." No. 1375—This is a cherry-red paint which is acid-proof, moderately alkaliproof, and under all conditions steamproof and waterproof. Is largely used in sugar refineries, paper mills, breweries, subways and places where paint is subjected to the continued fumes of chemical gases and to moisture.

"R. I. W." SMOKE STACK PAINT—This material stands heat up to the point of carbonization, and is excellent for painting the stacks of ferryboats and factories, boiler fronts, etc.

SERVICES

CO-OPERATION AND LITERATURE—Our expert and advisory services are at the command of architects and the trade. Mr. Maximilian Toch, F.C.S., author of "Chemistry and Technology of Mixed Paints," "Materials for Permanent Painting," "The Composition of Paints and Pigments," "The Permanent Protection of Iron and Steel," and many other publications, is the director of our laboratory. Mr. Toch is the municipal lecturer at the College of the City of New York on "Paint, Corrosion and Concrete," etc.

American Bitumastic Enamels Company

Manufacturers of

Wailles, Dove & Co.'s Patent "Bitumastic" Enamels, Cements, Coverings and Paints

JAMES HERMISTON & SON

NEW YORK, N. Y.

322 S. DELAWARE AVENUE
PHILADELPHIA, PA.

SAN FRANCISCO, CAL.
CLEVELAND, OHIO

PRODUCTS—BITUMASTIC SOLUTION, ENAMELS, CEMENT AND COVERING, used as a permanent Preservative of valuable Iron and Steel against Corrosion

INTRODUCTORY—Corrosion is a problem that has caused a great many discussions and an enormous expenditure of money. The efforts of the Founder of this Business were, for 20 years previous to its organization in 1854, concentrated on the production of a material wherewith Steel and Iron could be coated and **absolutely protected from corrosion**. These efforts resulted in the manufacture and placing on the market of our line of "BITUMASTIC" Commodities, which, from that day to this, have had no superior as a protective and lasting coating.

BITUMASTIC SOLUTION—A Brilliant Black Enamel Paint of great tenacity and durability, ready-mixed for use, and applied the same as ordinary paints, filling the pores of the Iron and Steel and adhering tenaciously to the metal. It is not affected by atmospheric changes, acids, or any element which tends to cause corrosion. It is principally used on Smoke Stacks, Boiler Fronts, Piping, Iron and Steel Structures of every description. All of our Bitumastic preparations are guaranteed to be **absolutely free from Coal Tar** and its objectionable components.

QUALITY AND DURABILITY—These coverings for the protection of Structural Steel and Iron have been thoroughly tested and demonstrated. Their extensive use in many important Engineering Works in the leading Navies and the Mercantile Marine of the world proves this statement.

In all these employments these coverings have in no way suffered or shown inefficiency, not even under the most severe conditions.

The Bitumastic Enamel, Cement and Covering are impervious to Acids, Alkalies, Chemical Fumes, Salt or Fresh Water; are damp and rustproof, besides being unaffected by alternate heat or cold.

SUGGESTIONS FOR SPECIFICATIONS—Specify that all Iron and Steel surfaces to be coated with Bitumastic Solution shall first be thoroughly cleaned and dried and freed from rust, oil, etc. Then apply two coats, allowing the first coat to dry for about 12 hours. Full directions for all cases will be furnished when goods are ordered.

For the permanent preservation of Fresh Water and Brine Tanks, Coal Bunkers, and all internal surfaces of Ships, specify one coat of Bitumastic Solution, applied cold, and one coat of Bitumastic Enamel, applied hot, the application to be 1/4-inch thick.

For Tank Tops and Waterproofing Work, specify one coat of Bitumastic Solution and one coat of Bitumastic Cement or Covering, the application to be about 1/2-inch thick.

The Bitumastic Enamel, Cement or Covering is applied only by our Skilled Workmen. Upon receipt of particulars we will be pleased to submit our prices for doing the work.

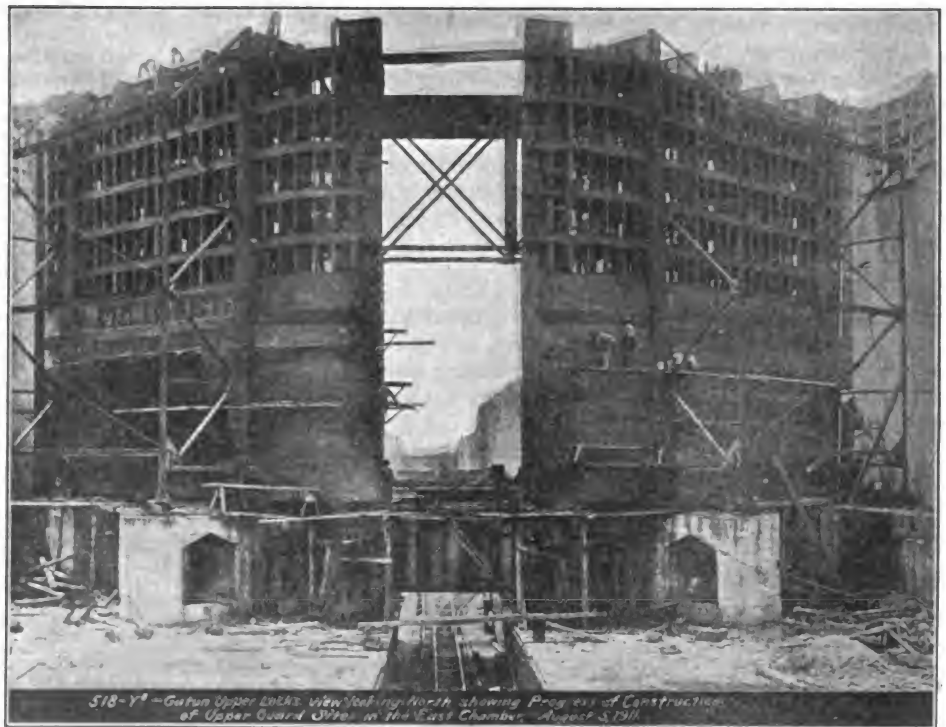
"A.B.C." SYSTEMS



PATENT BITUMASTIC ENAMEL—A permanent protection for Iron and Steel, indispensable to the Mercantile Marine. Bitumastic Enamel is applied 1/8-inch thick over the coat of Bitumastic Solution. Successfully specified and applied in and on tank tops, tanks, peaks, bilges, etc., and throughout the internal surfaces of ships. Bitumastic Enamel is the only known World's Anti-corrosive

Protection that absolutely prevents corrosion. This material can be seen in perfect condition on Steel and Iron Surfaces to which it was applied 20 years ago.

PATENT BITUMASTIC COVERING—BITUMASTIC CEMENT—Bitumastic Cement and Covering are used in lieu of Portland Cement, being one-fifth the weight, to reduce a vessel's draft and increase the carrying capacity. These materials are applied 1/2-inch thick in the same manner as the Bitumastic Enamel. All of the above materials are used for waterproofing in buildings, cellars, forts, etc. When incorporated in specifications, please



mention that they are to be applied by the AMERICAN BITUMASTIC ENAMEL COMPANY'S skilled workmen, so as to insure satisfactory and permanent results.

NOTE—It is of interest to note that the Specifications governing the coating of the entire internal surfaces of the Panama Canal LOCK GATES, now being erected for the U. S. Government in the Canal Zone, read, "that the surfaces are to receive one coat of Bitumastic Solution and one coat of Bitumastic Enamel, applied hot, by the Manufacturers." The prosecution of this work can be seen at any time.

Dexter Brothers Co.

Manufacturers of

Waterproofing Coatings and Interior Wall Coatings Shingle Stains and Oil Stains

NEW YORK

BOSTON

PHILADELPHIA

PRODUCTS—PETRIFAX DAMP-RESISTING COATING;
PETRIFAX CALX AND ROMAN CALX INTERIOR COAT-
INGS; PETRIFAX AND DEXTROLITE WALL ENAMELS

ENGLISH SHINGLE STAINS AND OIL STAINS for In-
terior Woodwork

**ENGLISH SHINGLE STAINS AND INTERIOR
OIL STAINS**—Color cards, samples and prices of
these well-known goods of our make are sent on
request.

TECHNICAL DESCRIPTION OF PETRIFAX—A damp-
resisting and decorative compound made in many colors, or
tinted the natural color of the surface to which it is applied.
It may be used as an exterior coating on old or new brick,
concrete blocks and monolithic reinforced-concrete surfaces.
Two coats are required for effectual waterproofing.

Eleven tints to select from.

Petrifax is also for use as an interior coating on brick, con-
crete floors and plaster walls, and gives a hard, smooth surface
easily kept free from dirt.

One or more coats applied to concrete floors keeps them
clean and prevents the surface wearing off. This coating is
not affected by oil; it is, therefore, especially recommended
for buildings where machinery is stored or operated.

Petrifax may be used to advantage on damp walls as an
undercoating for frescoing and calcimining to kill water stains,
or as an undercoating on concrete or brick swimming pools.

COVERING CAPACITY—Because of variation in porosity
of brick and concrete surfaces definite figures are not possible;
for estimating, 250 square feet may be allowed per gallon.
For smooth surfaces this estimate will be found too low, while
on extremely porous surfaces 150 square feet may be the limit.
A second coat covers considerable more surface.

PETRIFAX CALX—A specially prepared Petrifax for use
only on interior plaster walls where, because of conditions, it
is not necessary to use a damp-resisting coating. This com-
pound flows more freely than Petrifax and is, therefore, more
easily applied. It produces a smooth flat finish similar to
Petrifax. May also be used as an undercoating for enamel.
Can be tinted any desired shade.

ROMAN CALX—An interior finish for plaster, wood or brick.
Made in both flat and gloss. Can be tinted any shade by the
addition of color ground in oil. Both the flat and gloss Roman
Calx are washable.

PETRIFAX ENAMEL—A finishing coat recommended on
interior work over Petrifax or Petrifax Calx, where a gloss
surface is preferred—hard, smooth and perfectly sanitary.

DEXTROLITE—A high-grade enamel for interior work. Ex-
tremely white in color and positively will not yellow. Flows
perfectly from the brush and dries free from brush marks. A
finishing enamel for the best class of interior decorating. We
recommend flat lead and pure French zinc as an undercoating for
Dextrolite on woodwork.

Note. "Petrifax" or "Petrifax Calx" should be used as an
undercoating on concrete or brick.



SPECIFICATION DIRECTIONS.—

PETRIFAX. For Exterior Finish on concrete, brick or
stucco buildings.

PETRIFAX, PETRIFAX CALX, ROMAN CALX. For
Flat Finish on Interior concrete, brick or plaster wall or
floors:

Two coats, of color desired, to be applied as taken from
the package and allowed at least twenty-four hours
between coats.

PETRIFAX ENAMEL and DEXTROLITE. For
Enamel Finish on Interior walls of concrete, brick or
plaster, proceed as follows:

Give two coats of Flat Finish of either of the three kinds above
described, as dictated by circumstances. When the second coat of
undercoating is dry, apply a coat of either Enamel. If a more durable
Finish is desired, a second coat of Enamel may be applied forty-eight
hours after the first coat.

For Interior Woodwork use Flat Lead or Pure French Zinc for
undercoatings and finish with one or two coats of DEXTROLITE.

SPECIALLY INDICATED USES—Use Petrifax for In-
terior Walls of schools, office buildings, factories, etc.

Use Petrifax and Petrifax Enamel together as a sanitary
finish in breweries, creameries, dairies, hospitals. The light-
reflecting surface obtained is specially valuable in mills and
factories.

REFERENCES—The coatings herein described have been used in
the following buildings, among many others, and have given unquali-
fied satisfaction:

Numerous stucco-finished Residences, Stables, Garages, etc., list of
which will be furnished.

South Terminal Station, Boston, Mass.
Museum of Fine Arts, Boston, Mass.
Franklin Institute, Boston, Mass.
Municipal Gymnasium, East Boston, Mass.
Power Station, Fall River, Mass.
Boston & Northern St. Ry. Power House
Vermont Baking Co., White River, Vt.
Hotel Manhattan, New York City
Union Theological Seminary, New York City
East Branch, Y. M. C. A., New York City
Studebaker Garage & Warerooms, New York City
Hygiene Baths, Atlantic City, N. J.
Springfield Pure Milk Co., Springfield, Ohio
W. H. McElwain Shoe Co. (Power-Plant), Manchester, N. H.
Cape Breton Electric Co. (Stone & Webster, Engineers),
Sydney, N. S.
Kingston Apartments, Eastern Parkway, New York City
Methodist Episcopal Church, West Point, Ga.
Vermont Bakery, Hartford, Vt.
Moody's Northfield School, Northfield, Mass.
Y. M. C. A. Buildings at Athol, Cambridge, Lawrence and New-
ton, Mass.; Bangor, Me.; Louisville, Ky., and Quebec, P. Q.

TESTIMONIALS—We print a few testimonials out of a
great number received which speak for themselves:

DEXTER BROTHERS CO.,
Boston, Mass.

WHEELWRIGHT, MASS., Aug. 27, 1909.

GENTLEMEN: We have used your Petrifax for about a year now and find it the best
covering for bricks or cement on the market. We have also used it on metal and
found we could paint pipes when they were sweating and still have it stick. On brick
or cement one coating of Petrifax and then one of Enamel makes a well covered
smooth job.

Yours truly,

GEO. W. WHEELWRIGHT PAPER CO.
Per H. M. Wheelwright, Agent.

MESSRS. DEXTER BROTHERS CO.,
1133 Broadway, New York City.

PRINCETON, N. J., May 10, '11.

GENTLEMEN: I beg to advise you that I have been using the "Petrifax Cement
Coating" on outside walls of my house, made of brick with coating of cement laid over
wire netting; so far it has proven satisfactory.

Yours truly,
LOUIS F. CORTL

Agents at all central Points

Carbolineum Wood Preserving Company

515 PRAIRIE STREET
MILWAUKEE, WIS.

180 FRANKLIN STREET
NEW YORK, N. Y.

163 FRONT STREET
PORTLAND, ORE.

MONTREAL, QUE., 11 Sacrament St.
HAVANA, CUBA, 23 Amargura
SAN JUAN, P. R., 2 San Juan

American Branch Offices and Warehouses
MEXICO CITY, Profesa No. 4
NEW ORLEANS, Hibernia Bank Bldg.
CLEVELAND, 412 Citizens Bldg.

SAN FRANCISCO, 311 California St.
DENVER, 415 Charles Bldg.
SEATTLE, 514 Crary Bldg.

Depots
SAVANNAH
HONOLULU
MANILA

PRODUCTS—AVENARIUS CARBOLINEUM WOOD PRESERVATIVE and a General Line of WOOD PRESERVING MATERIALS and TREATED TIMBER. Also the Necessary Accessories or Appliances such as TANKS, HEATING OUTFITS, THERMOMETERS, BRUSHES, SPRAY OUTFITS, etc.

TECHNICAL DESCRIPTION—Avenarius Carbolineum is a non-volatile heavy oil derived from the highest-boiling distillate of coal tar. The constituents of this oil belong to the anthracene group, the antiseptic properties of which are acknowledged. After refining, the oil is chemically treated to improve its character as well as to increase its efficiency. Avenarius Carbolineum is *insoluble* in water. It readily penetrates wood and imparts a pleasing nut-brown color to it. It is a powerful *Antiseptic*, and a thorough *Germicide* and *Fungicide*.

CHEMICAL SPECIFICATION—

Specific Gravity at 38° C. Not less than 1.10 nor more than 1.12

Flashing Point.....140° C. Minimum

Burning Point.....175° C. Minimum

Distillate up to 250° C.....1% Maximum
250-300°.....10% Maximum
300-350°.....50% Maximum

Character of Residue—Soft

Tar Acids (% of total distillate) 10% Maximum

Specifications for method of analysis on request.

SERVICES—Chemical analyses of preservatives, inspections, reports, and all matters pertaining to consulting practice on the subject of timber preservation.

METHODS OF APPLICATION—The various methods of use are: A. Applying Avenarius Carbolineum with a brush (painting); B. Spraying with paint machines for larger surfaces; C. Dipping in Avenarius Carbolineum when quantities of timber are to be treated; in the open tank method, the duration of hot and cold treatments and the temperature of the preservative are regulated according to sizes and kinds of timber, moisture contents, density and the requirements of service. Short treatments are given to dry porous woods, longer treatments to dense and green timbers. Temperature of 180° F. for seasoned timber, 220° to 240° F. for green timber.

SPECIAL ADVANTAGES—Simple methods, known costs, positive results. The cost of treatment with Avenarius Carbolineum will average from 1c per square foot for painting, to \$10.00 per thousand feet, B. M. for tank treatment. This includes cost of preservative, labor and equipment.

The dipping and open tank methods are of

Avenarius
CARBOLINEUM
REGISTERED

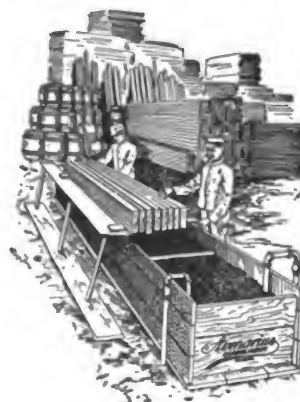
Preserves Wood Everywhere
On the Market Since 1876



BRUSH TREATING TIMBER AFTER FRAMING



SPRAYING FOR LARGE SURFACES



TREATING TANK

Tank of Peerless Motor Car Co., Cleveland, Ohio, 20' x 3' 4" x 3', lined with galvanized iron, with 1 1/2" pipes lengthwise for heating the Avenarius Carbolineum. Cost of tank, \$30.00. Labor charge, \$2.00 per 1,000 ft. B. M. Used for treating 150,000 feet of flooring, sills and joists.

great importance for the treatment of structural timber because they enable treatment at point of construction. The timbers are treated *after framing*, before erection, thus giving protection at all points needed. Strength of timber is increased by removal of sap and water. *Oil-seasoning*, or conducting heat through oil, does not weaken timber as *steaming* does. Inspection of timber and treatment at construction point is more effective, due to better supervision.

The cost of dipping is lower than that of pressure treatment, because unnecessary transportation and handling of timber is avoided; time saving, because as soon as treated, timber can be used in construction.

Even a very short dip or brush treatment with Avenarius Carbolineum will prevent decay, due to the high and permanent character of the antiseptics it contains, which destroy and make harmless fungus spores and prevent the infection of timber by these wood destroying agencies.

The non-inflammable character of Avenarius Carbolineum is proved by reports of a number of railroad engineers who have had experience with burned timber bridges, treated and untreated. These reports substantiate that bridge timbers treated were not more inflammable than untreated timber in its normal state.

Shrinking, swelling, warping or checking of timber is prevented by the use of Avenarius Carbolineum, as stated by Mr. O. U. Harper, engineer in charge of raising the Battleship "Maine." He stated that two coats of heated Avenarius Carbolineum were applied to all the timbers and planking used in the construction of the bulkhead for raising the "Maine," in order to **keep the wood stable**.

The following statement was made by Maj. E. C. Lewis, Chairman Board of Directors of the Nashville, Chattanooga and St. Louis Railway Co., in a letter dated April 11, 1910. Mr. Lewis is and has been a member of the American Society of Civil Engineers since 1873.

"Regarding Avenarius Carbolineum as a wood preserving agent I am sure I know of none more effective or economical. This relates especially to its mode of application, the treatment to the wood being about as simple as the putting on of a coat of common paint. Our bridges were repaired this fall. The top layers of a bow string, 2 1/2 x 12, which were coated with Carbolineum about 15 years ago were sound and still brown, while the lower layers, though protected by the top one, were entirely without strain value. The posts treated and set in 1890 are still sound. My boat, the hull of which was treated, washed away after 15 years of service, so I cannot tell how much longer it would have lasted."

CONCLUSION—All statements regarding the value of Avenarius Carbolineum as a preservative whereby the decay of wood is prevented are based upon known results.

**CLASSIFICATION PAGE OF
SECTION 6**

Cement, Lime, Plaster, Sand

(Special Waterproof Portland Cement see Section 4)

Section Synopsis

A. ROSENDALE Natural Hydraulic Cement; PORTLAND CEMENT, standard, American and imported: Portland Cement, waterproof; Non-staining Cement

B. BUILDING LIME, all kinds; Hydrated and Hydraulic Lime; Patented Lime; Agricultural Lime, Terra Alba, Land Plaster

C. CALCINED or Paris PLASTER, all grades; Keene's

Cement; Patent Wall Plasters; Prepared Interior Wall Finishes and Stuccos; Asbestos Plaster and Stucco; Asbestos fire and chimney cements; Fire Clay

D. Ready-mixed plastic Cement and Lime Mortar, for building and plastering; Building Sand; Special Quartz Sand, for facing cement products

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

[illegible]

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.	Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
Clermont Sewer Pipe Co. West Branch Fire Brick Co. S. 8 C, Cat. 1 (Fire clay)	Acme Cement Plaster Co.... St. Louis, Mo.		20	21 24 25			Bonner Brand Portland Cement Co. Kansas City, Mo.	2				
	Akron Gypsum Co..... Akron, N. Y.			22 25								
	Alden Lime Co..... Clinton, Iowa	10	11				California Portland Cement Co. Los Angeles, Cal.	2				
	Allentown Portland Cement Co. Allentown, Pa.	2					Cape Girardeau Portland Cement Co. Cape Girardeau, Mo.	2				
	Alpha Portland Cement Co. Easton, Pa.	2 10					Castalia Portland Cement Co. Pittsburgh, Pa.	2				
	Alsen's American Portland Cement Works New York, N. Y.	2 3					Chicago Portland Cement Co. Chicago, Ill.	2				
	American Cement Plaster Co. Lawrence, Kan.		20	22 24 25			Chickamauga Cement Co.... Chattanooga, Tenn.	1 4 10	12 13			
	American Gypsum Co..... Port Clinton, Ohio	10	12 20	22 24 25			Colorado Portland Cement Co. Portland, Colo.	2		22 25		
	American Hard Wall Plaster Utica, N. Y.			25	32		Connecticut Adamant Plaster Co. New Haven, Conn.	2 10	11 20	22 24 25		
	Ash Grove Lime & Portland Cement Co. Kansas City, Mo.	2 10	11 12				Consolidated Rosendale Cement Co. New York, N. Y.	2 4				
John P. Kane Co. S. 13, Cat. 1 ("Trowel" brand of Portland cement)							Continental Portland Cement Co. St. Louis, Mo.	2			33	
							Coplay Cement Mfg. Co.... Coplay, Pa.	2				
							Cowell Lime & Cement Co., Henry San Francisco, Cal.	2 10	11			
							Crown Wall Plaster Co.... Braddock, Pa.		20	22 25	32	
United States Gypsum Co. S. 7 B, Cat. 1 (Neat and prepared wall plasters)	Bellows Falls Pulp Plaster Co. Bellows Falls, Vt.			25								
	Best Bros. Keene's Cement Co. Medicine Lodge, Kan.			24								
See also the catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES	Binney & Smith..... New York, N. Y.	1					Dayton Fiber Plaster Co.... Dayton, Ohio			25		
	Bluff Stainless Cement Co. Allentown, Pa.	1					Dewey Portland Cement Co. Kansas City, Mo.	2				
							Dexter Portland Cement Co. Nazareth, Pa.	1 2				

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
Dixie Portland Cement Co. Chattanooga, Tenn.	2					Halderberg Cement Co..... Albany, N. Y.	2					Lukens & Yerkes..... Philadelphia, Pa.	10	11		33	
Eagle Point Lime Works... Dubuque, Iowa		11				Higginson Mfg. Co..... Newburgh, N. Y.			22			Mace Lime Co..... Rockfield, Wis.	10	11			
Edison Portland Cement Co. New York, N. Y.	2 10					Huron Portland Cement Co. Detroit, Mich.	2					Marblehead Lime Co..... Kansas City, Mo.	10	12			
Eichel Lime & Stone Co.... Evansville, Ind.	10	11 12		33		Independence Gypsum Co.... Enid, Okla.	10	20	22			Marquette Cement Mfg. Co.. La Salle, Ill.	2				
Electric Plaster Co..... Blue Rapids, Kan.		20	22 25			Iola Portland Cement Co.... Iola, Kan.	2					Mayville White Lime Works Mayville, Wis.		11			
Fairmont Wall Plaster Co... Fairmont, W. Va.	10	11 12 20	22 24 25	32 33		Ironton Portland Cement Co. Ironton, Ohio	2					Michigan Gypsum Co..... Grand Rapids, Mich.	10	20	22 25	32	
Fishack Gypsum Co..... Toledo, Ohio	10	20	22 25	33		Jamaica Paragon Plaster Co. Jamaica, N. Y.			25			Mills Bros..... Springfield, Ohio		11			
Florida Lime Co..... Ocala, Fla.	10	11 12				Keystone Plaster Co..... Chester, Pa.	10	11 12 20	22 25	32		Nazareth Cement Co..... Nazareth, Pa.	1				
Fowler & Pay..... Mankato, Minn.	4	11 13	22	32		King & Co., J. B..... New York, N. Y.	10	20	22 24 25	32		Newark Lime & Cement Mfg. Co. New York, N. Y.	10		22 25		
French & Co., Samuel H. Philadelphia, Pa.			22 25			King's Crown Plaster Co.... Cedar Rapids, Iowa			22 25	32 33		Newaygo Portland Cement Co. Newaygo, Mich.	2				
Garbutt Gypsum Co..... Rochester, N. Y.			22 25			Ladd Lime & Stone Co..... Cartersville, Ga.		12 13				New Castle Elastic Pulp Plaster Co. New Castle, Pa.			25		
German-American Portland Cement Works LaSalle, Ill.	1 2					Lawrence Cement Co..... New York, N. Y.	2					New Castle Portland Cement Co. New Castle, Pa.	2				
Grand Rapids Plaster Co.... Grand Rapids, Mich.	10	20	22 25			Longview Lime Works..... Birmingham, Ala.	10	11 12 13				New Jersey Adamant Mfg. Co. East Newark, N. J.		12	25		
Great Western Portland Ce- ment Co. Kansas City, Mo.	1 2					Louisville Cement Co..... Louisville, Ky.	2 3 4 10	11 12 13	22			New Jersey Lime Co..... Hamburg, N. J.	10	11		32	
Grove Lime Co., M. J..... Lime Kiln, Md.	10	11 12				Low Brother & Co..... Lime Ridge, Pa.	10					Niagara Gypsum Co..... Buffalo, N. Y.			22 25	32	
Hannibal Lime Co..... Hannibal, Mo.	12	13															

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
						Riverside Portland Cement Co. Los Angeles, Cal.	1					Texas Portland Cement Co. Dallas, Tex.	2				
Northampton Portland Cement Co. Bhaton, Pa.	2					Rochester Pulp Plaster Co.... Rochester, N. Y.			25			Toledo Pulp Plaster Co..... Toledo, Ohio	10	11 12	22 25	32	
Overland Cement Plaster Co. Laramie, Wyo.			22 25			Rockford Wall Plaster Co.. Rockford, Ill.			25	32		Union Cement & Lime Co.... Louisville, Ky.	4	11			
Owens & Son Co., John D. ... Owens, Ohio	10	11 12				Rock Plaster Mfg. Co..... New York, N. Y.			22 25	32		Union Portland Cement Co. Ogden, Utah	2				
												Union Sand & Material Co.. St. Louis, Mo.	2				
Pacific Coast Gypsum Co.. Tacoma, Wash.		20	22	32		Sandusky Portland Cement Co. Sandusky, Ohio	1 2					United States Portland Cement Co. Denver, Colo.	2				
Pacific Portland Cement Co. Con. San Francisco, Cal.	2					Security Cement & Lime Co. Baltimore, Md.	2 10	11 12				Universal Portland Cement Co. Chicago, Ill.	2				
Palmer Lime & Cement Co.. New York, N. Y.	2	11				Sheedy, Thomas W..... Payetteville, N. Y.	4 10	13				Utah Consolidated Plaster Co. Salt Lake City, Utah	10		22 25		
Paragon Plaster Co..... Syracuse, N. Y.			25	32		Southern Cement Co..... Birmingham, Ala.	1 2					Utica Hydraulic Cement Co. Utica, Ill.	4				
Paragon Plaster & Supply Co. Scranton, Pa.		12	25	32		Southern Gypsum Co..... North Holston, Va.		20	22 25	32		Vulcanite Portland Cement Co. Philadelphia, Pa.	2				
Parr & Co., William..... Galveston, Tex.	3		25			Southern States Portland Cement Co. Rockmart, Ga.	2					Wabash Portland Cement Co. Detroit, Mich.	2				
Peerless Portland Cement Co. Union City, Mich.	2					Southwestern States Portland Cement Co. Dallas, Tex.	2					Walton Quarries..... Harrisburg, Pa.	10	11 12			
Peninsular Portland Cement Co. Jackson, Mich.	2					Standard Lime & Stone Co. Baltimore, Md.	10	11 12 13				Washington Portland Cement Co. Seattle, Wash.	2				
Pierce City Lime Co..... Pierce City, Mo.	10	11				Standard Portland Cement Corporation San Francisco, Cal.	2					Wheeling Wall Plaster Co.. Wheeling, W. Va.			25		
Plymouth Gypsum Co..... Fort Dodge, Iowa	10	20	22 25			Struthers Furnace Co..... Cleveland, Ohio	1					Whitehall Cement Co..... Philadelphia, Pa.	2				
Portland Cement Co., of Utah Salt Lake City, Utah	2					Superior Portland Cement Co. Seattle, Wash.	2					Whiterock Quarries..... Bellefonte, Pa.	10	11			
Reeb, M. A. Buffalo, N. Y.			22 25			Sword Mfg. Co., R. P..... Mt. Holly, N. J.	1					Worm-Cox Co..... Chicago, Ill.	1 2 3				
Revis, William H..... New York, N. Y.	3		24			Tennessee Cement & Lime Co. Nashville, Tenn.	10	11 12				Wotherspoon Plaster Mills, Inc. New York, N. Y.		12	22 25	32	
												Wyandotte Portland Cement Co. Detroit, Mich.	2				



TRADE MARK

The Atlas Portland Cement Co.

30 BROAD STREET
NEW YORK, N. Y.

Works

COPLAY, PA.
NORTHAMPTON, PA.
HANNIBAL, MO.
HUDSON, N. Y.

PRODUCT—"Atlas" PORTLAND CEMENT

OUTPUT—Wonderful as the development of the general industry has been, the growth of The Atlas Portland Cement Company's plants has been even more so.

Beginning in 1892 at Coplay, Pa., with the modest capacity of 250 barrels per day, its production has steadily increased through the construction of plants at Northampton, Pa., at Hannibal, Mo., and at Hudson, N. Y., until now the productive capacity is more than 50,000 barrels each twenty-four hours, or approximately 18,000,000 barrels per year, with a storage capacity of over 4,000,000 barrels. This production is greater than the capacity of any other Portland Cement company in the world.

MANUFACTURE—"Atlas" Portland Cement is manufactured from the finest raw materials, under expert supervision in every department of the works. It is of the highest quality, being guaranteed to pass all usual and customary specifications, such as the specifications of the United States Government and those of the American Society for Testing Materials, which latter specifications have been concurred in by The American Institute of Architects and the American Engineering and Maintenance of Way Association.

By virtue of its enormous production, The Atlas Portland Cement Company is able to develop and retain in its service the most skilled operating talent in the Portland Cement industry, which insures a thoroughly reliable and uniform product.

PACKAGES—"Atlas" Cement is shipped in barrels, and in duck and paper bags. The barrels weigh 400 pounds gross, or 380 pounds net. When shipped in bags the weight is 95 pounds per bag, four bags to the barrel.

OUR RECORD—The growth of our output has been simply astounding, and is not due merely to the general increase in the use of Portland cement, but to the remarkable excellence of our product.

PANAMA CANAL CONSTRUCTION—The selection of our cement exclusively for the construction of the Panama Canal to the extent of many million barrels is in itself an unparalleled and unimpeachable record.

NON-STAINING ATLAS-WHITE—This is a Portland Cement of the highest quality. It possesses the strength and physical characteristics of Portland Cement and passes all standard specifications for this material, and in addition it is white, and non-staining.

The architectural possibilities with the use of Atlas-White are unlimited, as it is used for exterior as well as interior decorative work, as follows: For stucco work; in the preparation of mortars for setting marble, tile, brick, and stone; for facing concrete blocks; laying terrazzo floors; for the manufacture of decorative concrete stone; for wainscoting for bathrooms, kitchens, etc., and in fact for any work requiring the use of Portland Cement where a white color is desired.



RESIDENCE AT ROCHESTER, N. Y. ATLAS PORTLAND CEMENT USED

Atlas-White Portland Cement is absolutely non-staining and, therefore, is a most excellent material for laying up limestone, marble or any fine-textured stone.

As sand affects to a great extent the color of finished concrete work, we have prepared Atlas-White Mixtures, composed of Atlas-White Portland Cement mixed with pure white sand, ready for use with the addition of water. The proportions of the mixtures are one to one, one to two, and one to three, and are intended not only for the convenience of the trade, but for use in localities where a white sand is not obtainable.

ATLAS-WHITE MIXTURE NO. 1.—This mixture is composed of one part Atlas-White Portland Cement and one part pure white silica sand thoroughly and intimately mixed. The sand in this mixture is of fine even grain and the mixture can be used as a mortar:

For plastering on concrete walls, exterior or interior.

For floor surfacing where a rich mixture is required.

For use in making mortar for laying terrazzo and tile floors is more satisfactory than neat cement.

For setting ceramic mosaic tile, marble and wall tile of any description.

ATLAS-WHITE MIXTURE NO. 2.—This mixture is composed of one part of Atlas-White Portland Cement and two parts of pure white silica sand thoroughly and intimately mixed. The sand in this mixture is graded in such a manner as to make a dense mortar. This is the mixture recommended in the Standards of the National Association of Cement Users for surfacing concrete sidewalks and floors, as also for facing concrete blocks.

It is also the mixture recommended by the Associated Tile Manufacturers for tile setting, and for floating and buttering wall tile and the foundation for terrazzo floors.

It is also recommended for cast stone work of every description, such as window sills and lintels, balustrades, vases, garden furniture and decorative work.



TRADE MARK

ATLAS-WHITE MIXTURE NO. 3.—This mixture is composed of one part of Atlas White Portland Cement and three parts of pure white silica sand thoroughly and intimately mixed. The sand in this mixture is graded similarly to that in Mixture No. 2, the mortar being weaker on account of the additional sand. This mixture is recommended where an especially strong mortar is not necessary. It can be used for the manufacture of Cement brick.

Publications—For the benefit of those who desire to make durable improvements and as a guide to those who contemplate new construction, we have published the following books, which constitute the "Atlas Cement Library":

"Concrete Houses and Cottages," Vol. 1—Large Houses.....	\$1.00
Vol. 2—Small Houses.....	1.00
"Concrete Cottages" (sent free)	
"Concrete Construction About the Home and on the Farm" (sent free).	
"Reinforced Concrete in Factory Construction" (delivery charge).	.10
"Concrete in Railroad Construction".....	1.00
"Concrete in Highway Construction".....	1.00
"Concrete Garages" (sent free).	
"Atlas-White Pamphlet" (sent free).	



RESIDENCE AT GREEN'S FARMS, CONN. NON-STAINING ATLAS-WHITE PORTLAND CEMENT USED

The Lehigh Portland Cement Company

EASTERN OFFICE
ALLENTOWN, PA.

WESTERN OFFICE
CHICAGO, ILL.

Western Mills
MASON CITY, IOWA
MITCHELL, IND.

Eastern Mills
FOGELSVILLE, PA.
WEST COPLAY, PA.
ORMROD, PA.
NEW CASTLE, PA.



PACKAGE &
TRADE MARK

Branch Offices (West)
MINNEAPOLIS, MINN.
INDIANAPOLIS, IND.
CLEVELAND, OHIO
MEMPHIS, TENN.
OMAHA, NEBR.

Branch Offices (East)
NEW YORK, N. Y.
PHILADELPHIA, PA.
BOSTON, MASS.
NEW CASTLE, PA.
BUFFALO, N. Y.

PRODUCT—LEHIGH PORTLAND CEMENT

FOREWORD—Modern building and engineering construction demand a high-grade Portland Cement that possesses great tensile strength, is finely ground, uniform in color and discloses a good and uniform analysis. These properties are necessary to insure that all construction work shall improve in strength by age and stand forever if so required.

For many years we have devoted our attention to the most careful and systematic method of manufacturing Portland Cement, and have succeeded in producing and placing on the market one of the highest grades, a brand which has been used very largely for Government Work and Municipal Engineering throughout the United States and always proves reliable.

HISTORICAL AND TECHNICAL—Portland Cement was given its name by its discoverer, Joseph Aspdin, of Leeds, England, who called it **Portland** because of its similarity in appearance to the famous stone of that name quarried on the Isle of Portland in the English Channel. It is quite probable, also, that this cement was first produced there, by accident or invention, as the island is rich in all the necessary ingredients.

It is wholly an artificial product made by the burning of a finely ground and carefully proportioned mixture of cement rock, or limestone, and shale or clay to a point of fusion and then grinding the resulting mass to an impalpable fineness.

CAPACITY OF OUR WORKS—The Lehigh Company has six plants, including ten mills. The combined capacity of these mills at the present writing is 12,000,000 bbls. of cement a year. They are located at the following points: Ormrod, Pa., Mills 1, 2 and 3; Mitchell, Ind., Mills 1 and 2; Fogelsville, Pa.; New Castle, Pa., Mills 1 and 2; Mason City, Iowa, and West Coplay, Pa.

SHIPPING—These mills are so located as to enable us to make the promptest deliveries by either water or rail to any point in the United States at the lowest freight rates.

RAW MATERIALS—All of the sites of the Company's plants were chosen only after extensive examination had been made of the quarries so as to be certain that the raw materials to be used would contain just the proper ingredients for making a true Portland Cement.

TESTING—Great care is taken through all the steps of manufacture to make sure that material and process be up to the high standard prescribed. Laboratory tests of the raw material and finished product are made by expert chemists every hour. Daily tests for tensile strength, hot and cold water endurance, moisture and fineness, are also made of each batch of cement turned out and a check test is made on each carload before it leaves the mill.

This insured that nothing but a perfect product be shipped, and enables the user to accept the cement *without going to the trouble of testing it himself.*

Our cement is of extreme fineness, making it particularly available for constructions under water and for reinforced-concrete work and wherever a **pasty mass** is required.

PLANT EFFICIENCY—The Company has built its own mills. Each of our plants is equipped with the best and most up-to-date machinery for cement manufacturing.

PACKAGES—LEHIGH Portland Cement is put up in barrels, cloth and paper bags. The barrel (which is chiefly for export trade) weighs 450 lbs. gross, 380 lbs. net. The bags each weigh 95 lbs., making four bags to the barrel. We have our own cooperage shop for making good, substantial barrels for our Export trade. Cloth and paper bags are of very durable material of their kinds.

GROWTH—The growth of the Lehigh Company, from 700,000 barrel capacity in 1897 to 12,000,000 barrel capacity in 1912, is not alone due to the extensive and daily multiplying uses to which Portland Cement is being put, but also to the fact that we supply a cement of the highest quality.

A GOVERNMENT TEST ON LEHIGH—The following statement serves to illustrate the high standard of LEHIGH Cement. When the specifications were put forth on the government work at Tybee Island, Georgia, they were considered to be exceptionally rigid. The standard of testing was set as follows:

LIME	SILICA	ALUMINA	MAGNESIA	SULPHURIC	GRAVITY
52.53	22.13	9.55	2.51	1.49	3.15

The further specifications on this work were that the cement must have enough strength to support a weight of 300 pounds to the square inch, one part cement to three parts sand, in 28 days.

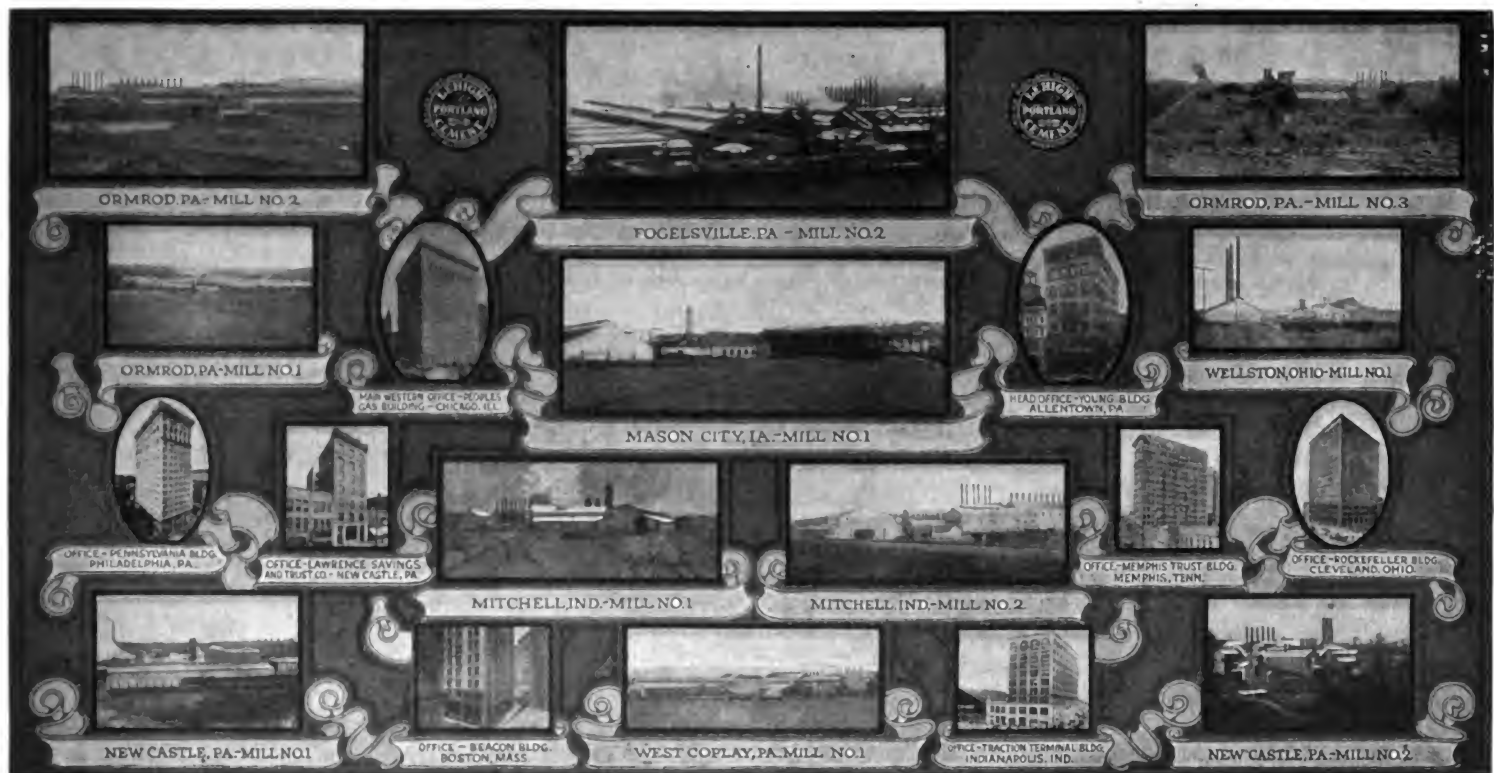
It was further stated that for *every 10 pounds compressive strength over this requirement* exhibited by the cement selected, the contractor would receive 5 cents per barrel bonus, and for every 10 pounds that the cement would fall under the requirements the contractor should forfeit 10 cents per barrel. LEHIGH Portland Cement was chosen and used. The aver-

pure loss to the Government. On the contrary the Government was the gainer."

The engineer realized that the higher the cement would test, together with good analysis, the *smaller the quantity* of cement that would be required. In other words, a large portion of sand and stone could safely be used in the concrete, thus effecting a saving to the government in the most costly material entering into the composition of the concrete.

ORDERS AND QUOTATIONS—The nearest branch office should be addressed, stating the amount of cement required, wood barrels, cloth or paper bags. The lowest quotation will then be made by us consulting with the mill nearest to the place of delivery. This insures prompt attention to all inquiries and renders satisfactory services at the lowest prices.

41 CONCRETE REASONS—This valuable book published by the Lehigh Portland Cement Co., in the interest of Con-



A GROUP OF "LEHIGH'S" MILLS AND OFFICES

age test attained was 355 pounds, one part cement and three parts sand, in 28 days, as provided in the specifications.

In consequence of the exceptionally high standard of their product, the Lehigh Portland Cement Company received an average bonus of 23 cents per barrel on the entire contract.

THE ENGINEER'S TESTIMONY—Captain B. E. Gillette, U. S. Engineer in charge of this work, stated in his report: "It may appear to some readers that paying this bonus was a

crete generally, gives 41 sound reasons why concrete should be used in preference to all other forms of building materials for many of the problems of construction. It is written by a civil engineer. In addition to stating the reasons in favor of concrete it reports tests and gives illustrations to prove its contentions. These "reasons" are good things for the architect to have at hand in his office for daily reference.

The book also contains the standard specifications for cement of the American Society for Testing Materials.

It will be sent free on request.

"A.B.C." SYSTEMS

Wm. G. Hartranft Cement Co., Inc.

Sole Selling Agent

Old Dominion and Penn-Allen Portland Cements

REAL ESTATE TRUST BUILDING

PHILADELPHIA, PA.

Penn-Allen Portland Cement



LOCATION

Manufactured by the Penn-Allen Cement Co., Penn-Allen, Pa. (Nazareth District), on the Lehigh & New England Railroad, connecting with Central Railroad of New Jersey, Lehigh Valley, Pennsylvania, Delaware, Lackawanna & Western, New York Central & Hudson, Central New England and New York, New Haven & Hartford Railroads

SHIPPING FACILITIES

Direct rail shipments can be made to all points in the country, and water shipments via Jersey City. Shipping capacity 4,000 barrels daily.

RAW MATERIALS

The Penn-Allen Cement Co. owns one hundred and sixty acres of land in the Lehigh Valley cement belt, containing an abundant supply of cement rock and pure lime stone, which produces a light-color, slow-setting, quick-hardening cement of the highest quality. The best for all purposes.

PRODUCTION

The plant was established in 1905 and has an annual capacity of 700,000 barrels; storage capacity of 100,000 barrels.

GUARANTEE

The Penn-Allen Cement Co. guarantees Penn-Allen Portland Cement to meet all the requirements of the American Society for Testing Materials, and Standard Government and Municipal specifications for Portland Cement.

REFERENCE

Penn-Allen Portland Cement has been used in the construction of large buildings and some of the most important engineering works of the United States Government, railroads and private individuals. Illustrated catalog showing views of such work sent on request.

"A.B.C." SYSTEMS

Old Dominion Portland Cement



LOCATION

Manufactured by the Virginia Portland Cement Co. at Fordwick, Augusta County, Virginia, on the main line of the Chesapeake & Ohio Railway Co.

SHIPPING FACILITIES

Direct rail shipments can be made to all parts of the country and vessel deliveries can be made to all water points North and South through Newport News. Shipping capacity 6,000 barrels daily.

RAW MATERIALS

The Virginia Portland Cement Co. owns twelve hundred acres of land, on which are large deposits of lime stone and shale of the proper analysis to make the highest grade of Portland Cement. This cement is light-colored, slow-setting and quick-hardening, especially adapted for reinforced-concrete construction, and other work requiring the best grade of Portland Cement.

PRODUCTION

The plant was established in 1900 and has an annual capacity in 1911 of 1,000,000 barrels, storage capacity 175,000 finished cement and 35,000 barrels clinker.

GUARANTEE

The Virginia Portland Cement Co. guarantees Old Dominion Portland Cement to meet all the requirements of the American Society for Testing Materials and Standard Government and Municipal specifications for Portland Cement.

REFERENCE

During the past ten years Old Dominion Portland Cement has been used on most of the important Government and Railroad engineering projects in the South. An illustrated catalog, giving photographic views of a large number of these interesting works, will be mailed to you on request.

The Kelley Island Lime and Transport Co.

Manufacturers of

Tiger Brand White Rock Finish

CLEVELAND, OHIO

NEW YORK, N. Y.

DULUTH, MINN.

PRODUCTS—TIGER BRAND WHITE ROCK FINISH; MARBLEHEAD LUMP LIME; GROUND TOLEDO LIME; AGRICULTURAL LIME; GROUND LIME STONE; FLUX STONE; CRUSHED STONE; HARD WALL PLASTER; SAND

DESCRIPTION—Tiger Brand White Rock Finish is Hydrated lime in the form of a dry white powder. The stone from which it is manufactured is unusually pure and uniform, and is prepared and milled in the best-equipped plant of its kind in the world.

The material is passed directly from the kilns to the hydrating department, thus obviating any opportunity for air-slacking. After being perfectly hydrated it is passed through screens and then ground finer than flour.

USES—Tiger Brand White Rock is the **Perfect Finishing Lime**. In addition it is entirely suited for mortar for laying brick and for the base coat of plastering; also for increasing the waterproof qualities of concrete work and stucco; for chemical purposes, agricultural uses and any other for which lime is used.

ECONOMY—Tiger Brand White Rock Finish is more economical to use than old-fashioned lump lime, because the cost of slaking and screening is entirely done away with. It can be "run up" on the floor close to the plastering work, saving much labor thereby.

The cost of Tiger Brand White Rock Finish, pound for pound, is no more than that of old-fashioned lump lime. Furthermore, the material is so finely ground that only two-thirds to one-half as much calcined plaster to a gauging is required for the hard finish as when "putty" made from old-fashioned lump lime is used, and the surface can be troweled to a polish with less labor.

ADVANTAGES—Tiger Brand White Rock Finish will produce a white wall, free from pits, pops, blisters, fire cracks or chip cracks, the lime being perfectly hydrated. Ordinary hydrated lime, when used for finishing, works short under the trowel; while TIGER BRAND WHITE ROCK FINISH works smoother and easier than any lump lime putty ever made. The absence of inert matter gives greater tensile strength in mortar made from our lime. All active properties are retained indefinitely, as Tiger Brand Finish will not absorb moisture from the air.

DISTRIBUTION—The plant of the Kelley Island Lime and Transport Company is located at White Rock, Ottawa County, Ohio, on the Lake Shore and Michigan Southern Railway. The product is sold by dealers at all principal points in the United States and Canada.



Delivery is made in 100-pound jute or 40-pound paper sacks, under our brand only—"Tiger Brand White Rock Finish."

SPECIFICATIONS—Finishing Coat—The Finishing Coat to be applied when second coat is nearly dry. Sprinkle with clean water if bone-dry.

MATERIALS—Finishing Lime to be Tiger Brand White Rock Finish. Use best grade of finely ground calcined plaster, best grade marble dust or clean sand.

To each 100 lbs. of Tiger Brand White Rock Finish add 25 pounds of calcined plaster. Add small proportion of sand or marble dust, either in putty box or on mortar board.

Finish coat to be applied in a first-class workmanlike manner and troweled to a smooth, polished surface free from brush marks.

REFERENCES—Tiger Brand White Rock Finish has been on the market since 1898. The following is a partial list of buildings where it has been applied:

Pennsylvania R. R. Terminal, New York City Architects, McKim, Mead & White	Whitney Central Bank Building, New Orleans, La. Architects, Clinton & Russell
Hotel Rector, New York City Architects, D. H. Burnham & Co.	Everett Building, New York City Architects, Goldwin Starrett & Van Vleck
Rockefeller Building, Cleveland, Ohio Architects, Knox & Elliott	East River Savings Institution, New York City Architects, Clinton & Russell
Contagious Hospital, Detroit, Mich. Architects, Melcomson & Higginbottom	Residence of Mrs. E. H. Bennett, Montclair, N. J. Architect, B. G. Sims
Residence of E. T. Bedford, Greens Farms, Conn. Architects, Carrere & Hastings	Denekla Building, Philadelphia, Pa. Architect, John T. Windrim
Union Depot, Baltimore, Md. Architect, Kenneth M. Murchison	Residence of William J. Grippin, Bridgeport, Conn. Architect, Jos. W. Northrop
Maury High School, Norfolk, Va. Architects, Neff & Thompson	Virginia Insurance Company Building, Richmond, Va. Architects, Clinton & Russell
Berger Building, Pittsburgh, Pa. Architect, S. S. Beaman	



DINING ROOM, HOTEL RECTOR, NEW YORK
Tiger Brand White Rock Finish Used

Charles Warner Company

Manufacturers and Distributors of

Cement, Lime, Plaster, Stone, Brick, Pipe
 WILMINGTON, DEL.

NEW YORK
 BOSTON

PHILADELPHIA
 WILMINGTON

PRODUCTS—"ALCA" LIME, Patented; HYDRATED LIME (LIMOID); COMMERCIAL LIME

Mason's Supplies: We are Sole Selling Agents of NAZARETH PORTLAND CEMENT, and Supply House for CRUSHED STONE, BAR SAND, BRICK, PIPE, ETC.

DESCRIPTION—"ALCA" Lime is a mixture of hydrated lime and an aluminous accelerating material (in the proportions of approximately 85 per cent and 15 per cent). This is a combination, practically of the old reliable lime element plus the active cement element (Calcium Aluminate), and it can be used in any work where a cement-gauged or lime-gauged mortar is needed. It has been demonstrated that the use of "ALCA" Lime Mixtures for stone work either rough or cut, in brick work, for interior plastering, sand finish, ivory or buff-colored finish (white excepted) and for exterior plastering or stucco work effects great economy and offers many advantages.

WHAT "ALCA" LIME WILL DO—"ALCA" Lime differs from all other lime products in its quicker-setting and hardening qualities. It retains, at the same time, the smooth and plastic working qualities identified with old-fashioned lime mortar. "ALCA" Lime gives the long-sought, reasonably quick-hardening lime mortar adapted to the conditions of modern building construction.

Furthermore, through its use the consumer eliminates all the uncertainties in the matter of slackening bulk lime and mixing therewith other materials such as cement and plaster alone or in combinations. "ALCA" Lime takes more sand and makes harder and better mortar than any known material used for the same purpose. After having set, which takes from three to six hours on any surface, **freezing will not injure it.** Stone or brick work joints will not disintegrate, if frozen after setting. **It sets in less time than any similar product.**

"ALCA" Lime should be worked as lime mortar is worked. No waste should occur with it. If any mortar remnants, such as are usually waste when other limes are used, are left on the work they may be used if not allowed to dry out. It makes mortar of uniform color and strength. For wide mortar joints it is preferable to cement-gauged lime mortar.

METAL LATH PROTECTION—The prevention of corrosion in metal lath, steel or iron to be embedded in plastering is reduced to a minimum by the use of "ALCA" Lime. Both Limes and Cements in their nature are *alkaline* and protect metals from corrosion. Acids promote it. Gypsum products being *acid* in their nature do not prevent the corrosion of metals.

"ALCA" Lime being absolutely alkaline, as it contains a preponderating percentage of lime, protects the metal lath embedded in it. It is, therefore, an excellent plastering material. In general "ALCA" Lime mixtures are used in mortar for laying brick, setting hollow tile, stone work, etc., the same as old-fashioned lime mortar.

SPECIFICATION DIRECTIONS—MIXING—"ALCA" Lime is better when allowed to slack for an hour after making into mortar; consequently it should be made up in two or more batches. First use the required amount of sand in layers to suit conditions of mixing. Then mix thoroughly two or three times, dry. Next provide a clear

space for water and then add it, hoeing the materials so as to spread them through the water. Always mix thoroughly. Avoid using too much water. A medium fineness of sand gives better results than an extremely coarse or fine sand.

PLASTERING ON WOOD LATH—Set lath the same as usual for side walls. Closer on ceilings. For first coat use 100 lbs. of "ALCA" Lime to 350 lbs. of sand. For second coat use 150 lbs. "ALCA" Lime to 450 lbs. of sand.

PLASTERING ON STONE, BRICK, HOLLOW TILE OR PLASTER BLOCK—For first and second coat use 100 lbs. of "ALCA" Lime to 500 lbs. of sand.

PLASTERING ON METAL LATH—For first coat use 100 lbs. of "ALCA" Lime to 300 lbs. of sand. For second coat use 100 lbs. of "ALCA" to 450 lbs. of sand.

STUCCO WORK—"ALCA" Lime does not require an addition of Portland cement for Stucco work. This saves trouble from cracking, checking and unevenly covered surfaces. It works well with any aggregate: sand (coarse or fine), gravel, pebbles, marble dust or stone screenings. Especially suitable for use in artificial-color combinations, because it is less caustic than fresh slacked lime and makes, therefore, the best blast for fresco work.

STUCCO ON HOLLOW TILE, BRICK, STONE OR METAL LATH—For first coat use 100 lbs. of "ALCA" Lime to 350 lbs. of sand. For finish coat use 100 lbs. of "ALCA" Lime to 400 lbs. of sand or gravel. When white sand or marble dust is used in the finishing coat it should be applied in two layers, one following the other. If colors are used they should be soaked in water for twenty-four hours before being mixed with the mortar, then measured accurately with each unit of measure for every batch or bed.

The surface of the walls should be damp before applying the mortar. The plaster should not dry too rapidly. When applying the finishing coat containing color, follow the sun or shade, as the case may be, and if possible cover the whole surface at one working.

"ALCA" LIME MORTARS FOR LAYING BRICK, HOLLOW TILE, STONE, ETC.—Use clean water and clean sand. Mix the sand with "ALCA" Lime the same as with lime mortar, in the old-fashioned way. Thoroughly mix dry before using water, as above directed. Do not add too much water.

FOR ROUGH BRICK WORK—Use one bag (100 lbs.) of "ALCA" Lime and 500 lbs. to 600 lbs. of sand (according to fineness of sand).

FOR ROUGH BRICK, FACE WORK—Use one bag (100 lbs.) of "ALCA" Lime and 400 to 450 lbs. of sand.

FOR FACE BRICK—Use one bag (100 lbs.) of "ALCA" Lime and 300 lbs. of sand. For large, heavy joints, instead of straight sand, use half sand and half gravel, stone dust or slag grit.

FOR HOLLOW TILE SETTING—For interior and exterior walls, use one bag (100 lbs.) of "ALCA" Lime and 350 lbs. of sand.

FOR FLOOR TILE, FLAT ARCHES—Use one bag of "ALCA" Lime and one bag of Portland cement and 500 lbs. of sand.

FOR CUT STONE—Use one bag of "ALCA" Lime and 300 lbs. of sand.

FOR ROUGH STONE—Use one bag of "ALCA" Lime and 650 lbs. of sand.

ORDERING OF "ALCA" LIME—It is packed and shipped in either burlap bags (100 lbs.) or paper bags (50 lbs.) as desired. "Green Tag" bags contain a mixture of hair. "Red Tag" bags contain a mixture of hair, but the amount of hair in it is increased to render the mixture especially suited for work on metal lath, or work where a longer-haired material is demanded. "Yellow Tag" bags contain a mixture without hair. The Colors—"Green" (hair) and "Yellow" (no hair)—readily distinguish the materials and should be remembered when ordering. Any additional information, or prices, forwarded upon request.

New Jersey Pulp Plaster Co.

Manufacturers of Trenton Pulp Plaster

TRENTON, N. J.

PRODUCT—TRENTON PULP PLASTER

INTRODUCTION—The merits of patent wall plaster, though a comparatively modern product, are firmly established. Only the lower price of lime keeps hand-made lime mortar plastering in use. Its unreliability, on account of the possibility of improper slaking of the lime, are recognized by the contractor and feared by the architect.

Also, with lime mortar, often inferior hair is used, or the hair is added while the lime is still hot, rendering the hair useless from burning. Again, there is no chemical action between lime and sand, the latter acting merely as a filler.

With patent wall plaster, on the contrary, the addition of water causes a **rapid uniform chemical action** and, if sand is used in proper proportion, all is cemented into a uniform mass. The plaster attains full strength in from four to seven days.

The increasing demand for gypsum plaster has resulted in constantly-improving methods of mining and manufacture, greatly lowering the cost of output and producing a material which, on its record, stands high in the estimation of architects and engineers.

TRENTON PULP PLASTER—This plaster is the product of a manufacturing plant in which have been concentrated the most advanced methods of manufacture. All ingredients of its product are subject to the most searching analysis and testing as to their quality and purity.

By the use of proportioning and weighing machinery an **absolutely uniform mixture** results, in which the quantities of the different ingredients may be set and kept at a standard found best by experience to produce the highest-grade product.

The mixing, being done by machinery, is thorough, eliminating inequalities resulting from hand-mixing processes.

Trenton Pulp Plaster, on account of the chemical composition of the gypsum rock used, possesses greater spreading and sand-carrying qualities than most wall plasters.

TEST—To establish conclusively the qualities we claim for **Trenton Pulp Plaster** we recently placed samples, for rigid test, into the hands of the Henry S. Spackman Engineering Company, Industrial and Chemical Engineers, of 42 N. 16th Street, Philadelphia. The following is an extract from their report:

"Sample No. 5 (**Trenton Pulp Plaster**) carries a low percentage of impurities. This sample, while its content of plaster of Paris is lower than that of either Nos. 3 or 4, showed physical properties superior to those of Nos. 1, 2, 3 and 4. The percentage of this material passing the various sieves was higher than that of any of the foregoing. We would particularly call attention to the **superior sand-carrying and spreading qualities** of this sample. While it is a gypsum plaster, its spreading and sand-carrying qualities were superior in every way to those of Nos. 3 and 4.

"We understand that sample No. 5 carries about 10% of **Hydrated lime**. This accounts for its superior spreading and sand-carrying qualities; and while it cuts down, somewhat,

the percentage of plaster of Paris and increases, somewhat, the percentage of magnesia, it **materially improves its physical properties** by substituting a more plastic and greater sand-carrying ingredient.

"For wall plastering purposes we would consider No. 5 **the most desirable** on account of its superior physical qualities. We would state, in this connection, that, in our opinion, the addition of hydrated lime would **exert no injurious effect** and would tend to **increase the ultimate strength** attained by the material, and, at the same time, lessen its tendency to crack.

"The tests made on the above samples for tensile strength entirely confirm our conclusions derived from the chemical analysis of these samples, **Trenton Pulp Plaster** developing a **much higher strength** than any of the other samples."

ADVANTAGES—**Trenton Pulp Plaster** is not injured by frost, is fireproof and waterproof, and has great covering capacity. It works like sand-and-lime mortar and will not buckle lath. The more water used the better the result, and it will carry as much sand as any plaster on the market.

SAND IN PLASTER—While mentioning the sand-carrying capacity of **Trenton Pulp Plaster** we would, at the same time, draw attention to the false policy of overloading plaster with sand. The smaller the quantity of plaster of Paris contained in a plaster the less sand will it carry.

DIRECTIONS FOR USE—The following directions for the use of **Trenton Pulp Plaster**, conscientiously followed, will produce the best results. A reasonable deviation may be made with safety; but it is to be remembered that two parts of sand to one of plaster, by measure, is equal to more than three-to-one, by weight:

NEAT—For scratch coat, on wood lath or wall board, use equal parts of sand and plaster.

For brown or second coat use a bag-and-a-half of sand to a bag of plaster. Remember this is by weight in the proportion of two parts sand to one part plaster.

On metal lath use same proportions as above.

On brick or terra cotta or other solid fireproofing surface use two bags of sand to one of plaster.

Plaster should, under no circumstances, be allowed to dry out too quickly. Plenty of water should be used. Nothing but water and sand should be added to the prepared plaster. Retempered mortar should not be allowed to be used.

LATH AND GROUNDS—For first-class work with **Trenton Pulp Plaster** the grounds should be $\frac{3}{4}$ ". This allows $\frac{3}{8}$ " for plaster and, in our opinion, produces the best results. For a cheaper grade of work $\frac{5}{8}$ " grounds may be used. Lath should be laid $\frac{1}{4}$ " to $\frac{3}{16}$ " apart so as to allow the plaster key to be formed without the exertion of much pressure.

Lath laid too closely is liable to buckle on account of the extra amount of moisture absorbed from the plaster.

Wolfe & Misner

Sole Distributers of Oriental Stucco and Interior Colored Finishes

Manufactured by the
MONUMENT PLASTER COMPANY, HARRISON, NEW JERSEY
ROOM 602 ESSEX BUILDING, CLINTON AND BEAVER STREETS
NEWARK, N. J.

PRODUCTS—ORIENTAL STUCCO in any Color for Exterior Work; PREPARED INTERIOR COLORED WALL FINISHES; MONUMENT SPECIAL SCRATCH AND MONUMENT SPECIAL BROWN, for Base Coat

Monument Special Brown for Brick, Terra Cotta, Concrete or second coat over Scratch coat will cover 80 square yards per ton. Oriental Stucco for finish will cover 200 square yards per ton.

STUCCO—Oriental Stucco has come to stay, for its many advantages are recognized. It possesses those qualities that were required to make Stucco a complete success, practically and artistically, to overcome the defective points in sand-and-cement mixtures used as a Stucco. Oriental Stucco has the slow-setting qualities which assure an absolute bond, and will not show the joinings.

PACKAGES—Monument Special Scratch and Monument Special Brown are put up in burlap sacks, weighing 125 pounds each. (16 bags to a ton.)

COLORS—Oriental Stucco is furnished in any color, ready mixed, and for application requires only the addition of clean water. The colors will not fade and are absolutely uniform. Will not become blotchy or pale, like other materials used for this purpose.

ADVANTAGES—There is nothing in Oriental Stucco to decompose, therefore it will not chip, crack or crumble away. It is absolutely fireproof, waterproof and verminproof, and does not tarnish or discolor with age.

GRADES—Monument Special Scratch, for first coat on wood or wire lath.

Monument Special Brown for first coat on Brick, Terra Cotta, Concrete, or for second coat over Special Scratch.

Oriental Stucco for final or finish coat in any color.

APPLICATION—The covering capacity of Oriental Stucco is greater than that of any other material used for the same purpose. Weighs considerably less than ordinary cement mortar. Its lightness facilitates its application, saving a part of the cost of labor.

CAPACITY—Monument Special Scratch for Metal Lath will cover 65 square yards per ton.

"A.B.C." SYSTEMS



RESIDENCE OF CLARENCE D. WHITE, RED BANK, N. J.
Fred. M. Truex, Architect



KILBURN PLACE, SOUTH ORANGE
W. C. Sanderson, Owner

Oriental Stucco, in all colors, is put up in burlap sacks weighing 100 pounds each. (20 bags to a ton.)

SPECIFICATION DIRECTIONS—

MONUMENT SPECIAL SCRATCH FOR BASE COAT—Place in clean mortar box, add sufficient water, mix thoroughly until mixture is of even consistency. It then can be readily applied in same manner as any ordinary cement mortar.

MONUMENT SPECIAL BROWN FOR BASE COAT—Place in clean mortar box, add sufficient clean water, mix thoroughly until mixture is of even consistency. It then can be applied in same manner as any ordinary cement mortar.

ORIENTAL STUCCO FOR PEBBLE DASH—Place in clean mortar box or pail, add sufficient clean water, mix thoroughly until mixture is of even consistency. Keep the mixture well stirred while using. Do not allow the heavier materials to settle, and apply with Wire Brush or Wist Brush.

ORIENTAL STUCCO FOR STIPPLE FINISH—Place in clean mortar box or pail, add sufficient clean water, mix thoroughly until mixture is of even consistency. Keep the mixture well stirred while using. Do not allow the heavier materials to settle, and apply with trowel and stipple with Wist Brush or Sponge.

ORIENTAL STUCCO FOR FLOAT FINISH—Place in clean mortar box or pail, add sufficient clean water, mix thoroughly until mixture is of even consistency. Keep the mixture well stirred while using. Do not allow the heavier materials to settle, and apply with trowel, and float, with wooden or felt float, or can be left with plain trowel finish.

Interior colored finishes are applied under same directions as given above.

REFERENCES—We have numerous written testimonials from architects, owners and mason builders; these will be sent on request.

H. W. Johns-Manville Co.

ALBANY
ATLANTA
BALTIMORE
BIRMINGHAM
BOSTON
BUFFALO
CHICAGO
CINCINNATI

CLEVELAND
DALLAS
DETROIT
DULUTH
HOUGHTON
HOUSTON
INDIANAPOLIS
KANSAS CITY

LOS ANGELES
LOUISVILLE
MEMPHIS
MILWAUKEE
MINNEAPOLIS
NEWARK, N. J.
NEW ORLEANS
NEW YORK

OKLAHOMA CITY
OMAHA
PHILADELPHIA
PITTSBURGH
PORTLAND, ORE.
RICHMOND, VA.
ROCHESTER
SAN FRANCISCO

SEATTLE
ST. LOUIS
ST. PAUL
SYRACUSE
TACOMA
WASHINGTON
WILKES-BARRE

ASBESTOS

For our Catalog on Roofing Materials see Section 26B Cat. 8
For our Catalog on Pipe and Boiler Coverings see Section 28D, Cat. 2
For our Catalog on Refrigerating Machines and Insulating Materials see Section 32A, Cat. 5
For our Catalog on Electrical Materials see Section 42, Cat. 6

PRODUCTS—Building Materials: J-M SANITOR CLOSET SEATS, J-M TRANSITE ASBESTOS WOOD, J-M VITRIBESTOS SMOKE STACK LINING, J-M VITRIBESTOS VAULT LINING, J-M ASBESTOS STUCCO AND WALL PLASTER, J-M ASBESTOS CLOTH AND VITRIBESTOS THEATER CURTAINS, J-M TRANSITE ASBESTOS WOOD PICTURE MACHINE BOOTHS, J-M ASBESTOS FIRE AND ACID PROOF CHIMNEY CEMENT, KEYSTONE HAIR INSULATOR, J-M ASBESTOS ROLL AND SHEET MILL BOARD, J-M NON-BURN BUILDING PAPER, J-M ASBESTOS SLATERS' FELT, ARCHITECTURAL ACOUSTICS, J-M ASPHALT WATERPROOFING, CEMENT, J-M ASPHALT SATURATED FABRIC, J-M WATERPROOFING ASBESTOS FELT, J-M LIQUID WATERPROOF COATING, J-M CONCRETE PRIMER, J-M CUT STONE BACKING, J-M PLASTER BOND, J-M MASTIC, ARCHITECTURAL ACOUSTICS

J-M ASBESTOS STUCCO—

DESCRIPTION—J-M Asbestos Stucco is made of pure Asbestos Fibers and uniformly ground Asbestos Rock.

ADVANTAGES—Sand, which is necessary in all other stuccos, contains vegetable matter and other foreign materials that not only cause stains and discolorations, but also prevent proper setting and make the stuccos liable to crack and flake off. As J-M Asbestos Stucco contains no sand or vegetable material, it dries a handsome gray-white color which lasts indefinitely without discoloring or flaking. It is absolutely unaffected by water or the most severe climatic changes.

As a non-conductor of heat and cold, J-M Asbestos Stucco presents an important advantage in fuel saving. It keeps buildings warm in winter and cool in summer. And it positively prevents the sides of a building catching fire from adjoining conflagrations.

It is lighter in weight, spreads more evenly and smoothly, has a greater covering capacity, and can be applied at a less cost of labor than sand and cement stuccos. When mixed according to directions, one ton of rough Asbestic will cover approximately 50 square yards $\frac{5}{8}$ " thick.

Any desired color and texture effect can be obtained with this stucco—from a smooth trowel finish to a very rough cast or slap-dash.

HOW TO SPECIFY—The material to be used shall be H. W. Johns-Manville Company's Asbestic mixed according to the following proportions:

For the scratch coat, three parts Asbestic, one part Portland Cement and ten per cent of the weight of cement of Hydrated Lime.

For the Browning Coat, three parts Asbestic, one part Portland Cement, ten per cent of the weight of cement of Hydrated Lime and the addition of the proper proportions of a standard waterproofing compound or paste to be incorporated in the stucco material for this coat.

For the Finish Coat, two and one-half parts of Asbestic, one part Portland Cement and ten per cent of the weight of cement of Hydrated Lime. If colored stucco is desired, the H. W. J-M Co. will be pleased to submit formulas.

NO SAND SHOULD BE ADDED.

WHEN APPLIED OVER WIRE LATH AND EXPANDED METAL—Over the sheathing boards apply horizontally one layer of H. W. Johns-Manville Company's Neptune Brand Hair Insulator, lapping it one inch (1") and tacking it in place with the waterproof side out. Over this nail thin vertical furring strips or mason's lath, on twelve inch centers, and over these apply horizontally the lath or expanded metal. The lath shall be nailed to the furring strips and lapped at least one inch and the laps between the furring strips shall be nailed with a galvanized staple sufficiently long to get a hold in the sheathing boards. This will prevent any cracking occurring from the lappings.

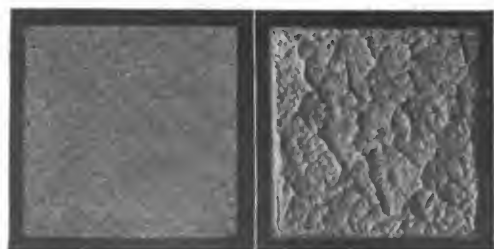
WHEN APPLIED OVER TERRA-COTTA BLOCKS, CONCRETE BLOCKS AND BRICK—The surface to which the scratch coat is to be applied should be free from all foreign matter and should be thoroughly wet down before this coat is applied. The surface of the scratch coat, after it has been applied, should be thoroughly scored with a piece of lath or other tool in order to provide a sufficient key for the subsequent coats.

Should three coats be desired, a browning coat may be applied over the scratch coat after it has become sufficiently set to allow working upon, not before twelve hours after the scratch coat has been applied, and should be left slightly rough in order to furnish some key for the finishing coat.

Should only two coats be desired, the finishing coat may be applied directly to the scratch coat. The scratch and browning coats should be thoroughly wet down before another coat is applied to them, in order that they will not absorb the moisture from the following coat. The first coat shall be applied at least $\frac{3}{4}$ " thick, and the second and finishing coats not less than $\frac{1}{4}$ " thick. The finish coat of stucco shall be of a texture and color which shall be approved by the architect.

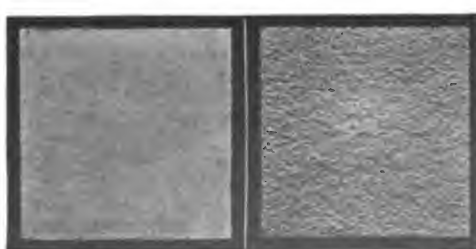
All finish coat work should, as far as possible, be applied to the entire area of one side of the structure at one operation. No finish coat work should be left in an incompleated condition. All work shall be carried to the angles.

A FEW OF THE HANDSOME FINISHES POSSIBLE WITH J-M ASBESTOS STUCCO



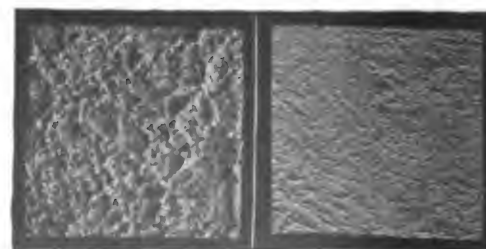
FLOAT FINISH

LIGHT SUCTION



TROWEL FINISH

STIPPLE FINISH



ROUGH CAST

ROUGH SUCTION

"A.B.C." SYSTEMS

CLASSIFICATION PAGE OF SECTION 7

Cement, Concrete, Plaster Structural Products

(Artificial Stone and Marble see Section 10)

Section Synopsis

A. Concrete Blocks and Machines; Sewer and Drain Pipe, Flue Pipe, Agricultural Drain Tile; Paving Tile; Roof Tile; Chimney Pots; Electrical Conduits, Underground; Fence Posts and Sundry Cement-Concrete Castings; Cast Concrete Houses; Concrete Lumber; Cisterns, Silos

B. GYPSUM COMPOSITION BLOCKS, for fireproof partitions, roofs, columns, insulation work, etc.; Plaster Board; Plaster or Gypsum Studding; Asbestos Composition Studding, Lumber

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX			Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers						
REGULAR CLASSIFICATION					1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		
A	1	Cast concrete houses	Catalog B 1								
	2	Cement blocks									
	3	Cement-block machines									
	4	Cisterns, silos, tanks									
	5	Drain pipe, sewer, agricultural									
	6	Electrical conduits, underground									
	7	Fence posts, hitching posts, chimney pots, flue pipe, sills, and similar castings									
	8	Lumber, concrete									
	9	Paving tile, yards, streets, etc.									
	10	Roofing tile, concrete, flat									
	11	Roofing tile, glass insert									
B	20	Asbestos composition studding and lumber									
	21	Gypsum plaster composition blocks, for partitions and general fireproofing									
	22	Gypsum studding									
	23	Plaster board									
SPECIAL CLASSIFICATION			Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers						
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.					1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		
	33	Composition cement floors and pavements (S. 26 C)	A 1	American Cement Tile Manufacturing Co. Pittsburgh, Pa.							
	34	Neat and prepared wall plaster (S. 6 C)									
	35	Reinforced cement plumbing fixtures (S. 35 B)									
TRADE NAMES AND BRANDS			Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers						
					1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		
"Adamant," prepared wall plaster			Catalog B 1								
"Alabaster," neat and prepared wall plaster											
"Baker," neat and prepared wall plaster											
"Big Four," neat and prepared wall plaster											
			B 1	United States Gypsum Co. Chicago, Ill.							21 22 23
			See also the catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES								

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		1 to 8	9 to 16	17 to 24	25 to 32	33 to 40
Acme Cement Plaster Co. St. Louis, Mo.	6		20									Reinforced Concrete Pipe Co. Jackson, Mich.	5				
American Cement Plaster Co. Lawrence, Kan.	6		20			Federal Cement Tile Co. Chicago, Ill.		10				Round & Son, David..... Cleveland, Ohio	7				
						Granitine Wall Plaster Co. Lebanon, Pa.	2 4 7	9	21 23		33	Snell Co., Samuel..... Holyoke, Mass.	2 5 7				
Blane Stainless Cement Co. Allentown, Pa.	2					Hastings Pavement Co. New York, N. Y.		9 10									
Bolls Mfg. Co. Cleveland, Ohio	2 3					Keystone Fireproofing Co. New York, N. Y.			21								
Bonnot Co. Canton, Ohio	3					Keystone Plaster Co. Chester, Pa.			21 22 23								
Brodie Hydraulic Concrete Press Co. New York, N. Y.	3					Lock Joint Pipe Co. New York, N. Y.	5										
						Marsh Co. Chicago, Ill.	3	9				Wallace Concrete Machinery Co. Los Angeles, Cal.	3				
						Metal Rib Plaster Board Co. New York, N. Y.			23								
Capes, C. W. New York, N. Y.		2				Modern Concrete Co. Canton, Ohio		10				Wilson & Bailie Mfg. Co Brooklyn, N. Y.	5				35
Concrete Column & Const. Co. Detroit, Mich.	8											X. L. Concrete Stone Ma- chinery Co. Kansas City, Mo.	3				

American Cement Tile Manufacturing Co.

"Bonanza" Cement-Tile Roofing

Branch Offices

NEW YORK, N. Y., 29 Broadway
BIRMINGHAM, ALA., P. O. COREY, ALA.

General Offices: OLIVER BUILDING

PITTSBURGH, PA.

Branch Offices

CHICAGO, ILL., First Nat. Bk. Bldg.
ST. LOUIS, MO., 1228 Syndicate Bldg.

Works

WAMPUM, PA.

LINCOLN, N. J.

COREY, ALA.

CRYSTAL CITY, MO.

PRODUCTS AND SERVICES—We manufacture and erect in place on the roof our "BONANZA" REINFORCED CEMENT-TILE ROOFING, CEMENT-TILE GUTTERS AND CEMENT-TILE PLATES

"BONANZA" CEMENT TILE FOR PITCHED ROOFS—Our standard tile for pitched roofs are illustrated in Fig. 1. The one in front shows the *side exposed to the weather*. This side of tile is finished with a special waterproof and weatherproof surface of a **dark terra-cotta red** which is worked into the tile during manufacture. The tile behind the first shows the *under side*, which presents a special white cement finish. The tile is hung to roof purlin by the rim formed at the upper end of tile, as shown in Fig. 4. Joints between tile are overlapping and interlocking, and are made **absolutely weathertight**, by pointing up with our special elastic cement. For sizes and weights see special paragraph.

HOW MADE—These tile are made of best Portland Cement reinforced with No. 18 expanded metal, which is placed at uniform distance of $\frac{1}{4}$ inch from the under side.

GLASS INSERTION—Where additional light is desired in machine shops, foundries, etc., our glass insert tile, shown in the accompanying illustration, Fig. 2, may be substituted for the solid tile. The $\frac{1}{4}$ -inch wire glass is thoroughly imbedded in the tile, which is specially reinforced with rods for this purpose. These tile, also, are guaranteed to be absolutely watertight.

"BONANZA" CEMENT TILE FOR FLAT ROOFS

—These are $1\frac{1}{2}$ inches thick, 24 inches wide, 60 inches or less, long, and are perfectly flat and smooth. They are made of best grade Portland Cement reinforced with No. 16 expanded metal and two $\frac{1}{4}$ -inch square twisted bars to each tile. Their weight is 16 lbs. per sq. ft.; they require purlin spacing of 5 feet or less, and are designed to receive any kind of composition roofing. (See Fig. 4.)

"BONANZA" CEMENT-TILE PLATES—These are made for facing above, below or between ventilators in sloping roofs, and to cover walls of gable ends flush with roof. Their make is the same as that of cement tile for sloping roofs, except that they are perfectly smooth. Thickness, $1\frac{1}{4}$ to $1\frac{1}{2}$ in. Length and breadth vary, but area is never greater than 20 sq. ft., i. e., 4 x 5 ft. They are cemented and keyed to 4-in. I beams which form part of the building structure, dispensing with bolting.

PROPERTIES—Our CEMENT-TILE ROOFS are absolutely weatherproof, waterproof and fireproof and are not affected by gases of any kind. This roofing, requiring no repairs, practically eliminates all cost of maintenance.

PRICES—We furnish our material erected in place by our own experienced roofers and shall be glad to quote prices on receipt of drawings and other necessary information.

GENERAL DRAWINGS—On application, our Engineering Department will gladly co-operate with our patrons and furnish details and general drawings covering the use of our "Bonanza" Tile. Write for fully illustrated catalog.

"A.B.C." SYSTEMS



DETAILED VIEW OF OUR "BONANZA" CEMENT-TILE ROOFING



FIG. 1.—"BONANZA" STANDARD TILE

LOAD TESTS—To test their strength, tiles are laid on parallel supports, and uniformly loaded by water pressure, with the following results:
Age, 30 days; average breaking load, 200 pounds per square foot of area.

Age, 3 months; average breaking load, 250 pounds per square foot of area.

No tiles are shipped or placed on roof unless they are at least 30 days old.

DIMENSIONS AND WEIGHT—

Thickness of tile, $\frac{7}{8}$ in.; size of tile, 26 x 52 in.; surface exposed to weather, 24 x 48 in.; number of tiles per square of roof (100 sq. ft.), $12\frac{1}{2}$; weight of single tile, 105 lbs.; weight per square of roof, 1312 lbs.; weight per sq. ft., $13\frac{1}{8}$ lbs.



FIG. 2—"BONANZA" TILE WITH GLASS INSERTION

Continued on next page

TYPES OF BUILDINGS COVERED—Our "Bonanza" Cement-Tile Roofing is especially adapted for industrial buildings such as manufacturing plants, foundries, warehouses, machine shops, blacksmith and forge shops, cast houses, steam and electric power plants, railroad buildings, train sheds, etc.

SPECIFICATIONS FOR "BONANZA" CEMENT TILE ON SLOPING ROOFS

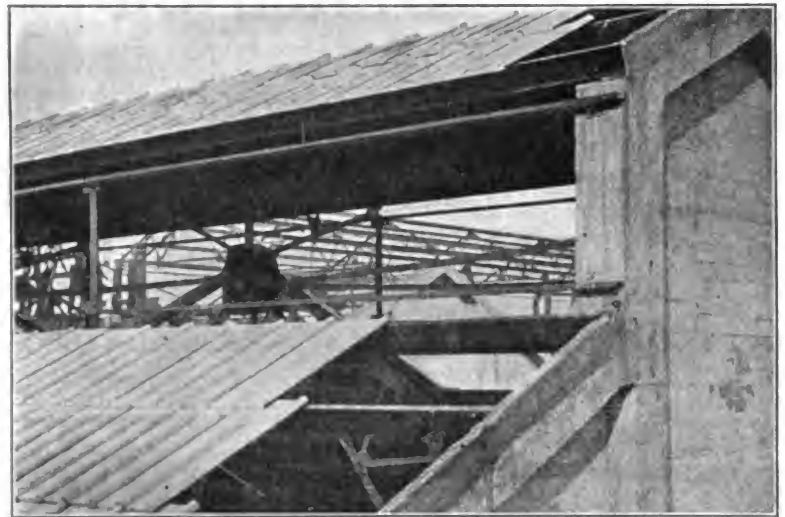
ROOF DESIGN—Tiles must be laid on steel purlins spaced 4 feet apart. This is the standard spacing which, if required, may be varied from 3 feet 10 inches to 4 feet 1/2 inch.

ROOF PITCH—The least permissible slope of roof is one-fifth pitch, by which is meant that the rise of roof must be at least equal to one-fifth its span.

ROOF PURLINS—The roof purlins must in all cases be channels or I beams, the use of trussed angle purlins is not to be allowed for the reason that they are not stiff enough laterally.

SAG RODS—All purlins must be straight and held in alignment by the use of sag rods. One line of sag rods is to be used for bays up to 16 feet span; for larger spans use two lines.

The eaves purlin course must be raised 1 inch by means of a plate of that thickness between channel and truss in order to give to the last tile the same slope as that possessed by the other tiles. A similar arrangement holds good for first purlin at roof apex, where short tile are used. Should the pitch length of roof not allow the use of



ROOF UNDER CONSTRUCTION SHOWING BEARINGS

standard tile length throughout, the short course is to be placed as a ridge course, and may be spaced 20, 24, 28, 32 or 36 inches.

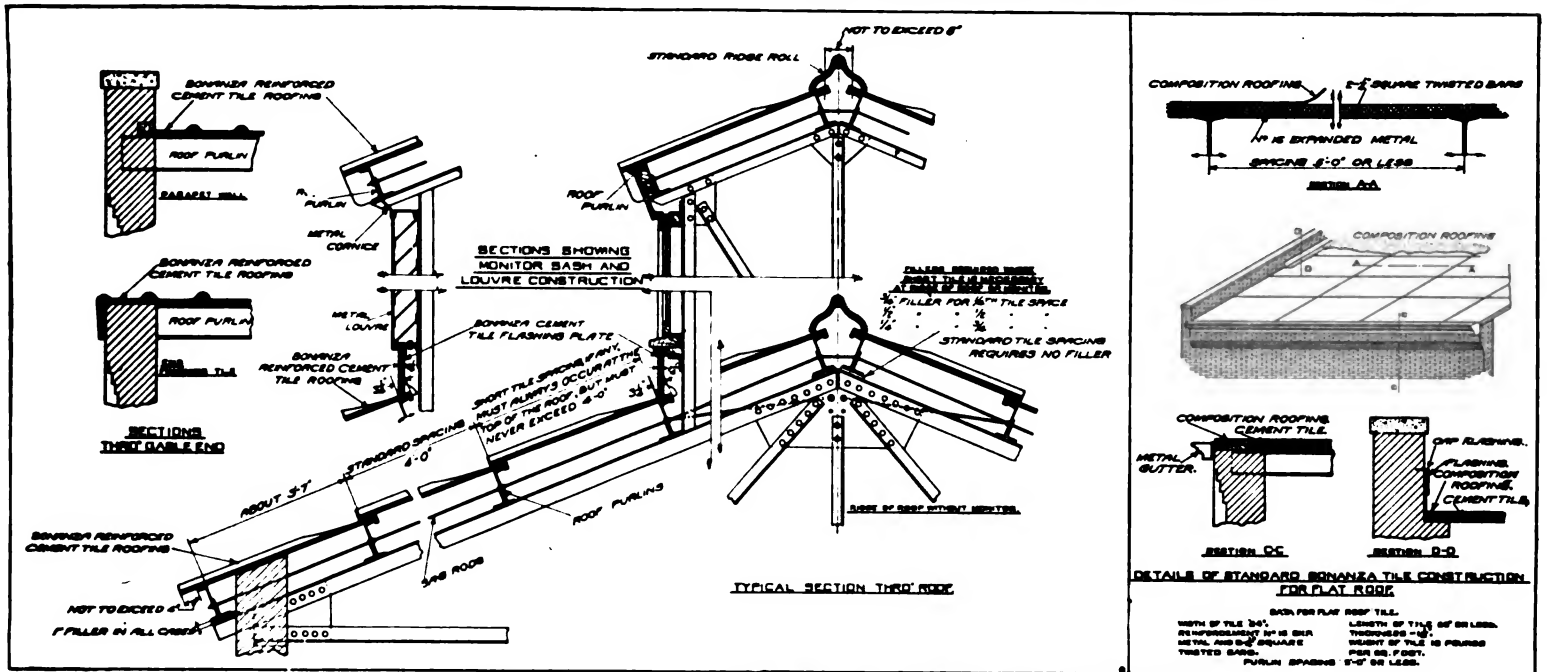


FIG. 4—SECTIONAL DETAILS OF STANDARD "BONANZA" CEMENT-TILE CONSTRUCTION

REFERENCES

ENTIRE PLANTS
American Car & Foundry Co., St. Louis, Mo.
Canadian Copper Company, Copper Cliff, Ont.
Crescent Portland Cement Co., Wampum, Pa.
Corrigan-McKinney Co., Cleveland, Ohio
Detroit Steel Products Co., Detroit, Mich.
Damascus Bronze Co., Pittsburgh, Pa.
Four States Coal & Coke Co., Worthington, W. Va.
General Chemical Co. (N.Y.C.), Pulaski, Va.
Johnetta Foundry & Machine Co., Marianna, Pa.
Nelson Valve Co., Philadelphia, Pa.
Pittsburgh Plate Glass Co., Crystal City, Mo.
Pittsburgh Plate Glass Co., Kokomo, Ind.
Pulaski Mining Co., Pulaski, Va.
Simonds Manufacturing Co., Lockport, N. Y.
Symington, T. H., Co., Rochester, N. Y.
Union Switch & Signal Co., Swissvale, Pa.
Notes—Most all of the above plants comprise Machine Shops, Foundries, Blacksmith and Forge Shops, Power Plants and miscellaneous Manufacturing Buildings not included under the following headings:

MACHINE SHOPS
Leard, W. J., New Brighton, Pa.
N. Y. Air Brake Co., Watertown, N. Y.
Newark Tube & Metal Co., Newark, N. J.
Star Drilling Machine Co., Akron, Ohio
Treadwell Engineering Co., Easton, Pa.
United Engineering & Foundry Co., Youngstown, Ohio

FOUNDRIES
Bonnot Co. (The), Canton, Ohio
Frontier Iron Works, Buffalo, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Pittsburgh Valve & Fittings Co., Barberton, Ohio
Somerville Iron Works, Somerville, N. J.
Warren Foundry & Machine Co., Phillipsburg, N. J.

BLACKSMITH AND FORGE SHOPS
American Vanadium Co., Bridgeville, Pa.
American Fork & Hoe Co., Ashtabula, Ohio
American Ship Building Co., Lorain, Ohio
Baldwin Locomotive Co., Eddystone, Pa.
Pollock, W. B., Company, Youngstown, Ohio
Treadwell Engineering Co., Easton, Pa.

STEAM AND ELECTRIC POWER PLANTS
American Case & Register Co., Alliance, Ohio
American Seeding Machine Co., Springfield, Ohio
Chattanooga Gas Co., Chattanooga, Tenn.
Detroit Copper & Brass Rolling Mills, Detroit, Mich.
Edison Electric Illuminating Co., Cumberland, Md.
Firth Sterling Steel Co., Washington, D. C.
Hecksher, Richard, & Sons Co., Swedeland, Pa.
Hudson Engineering Co. (N. Y. C.), L. I. City, N. Y.
Lewistown & Reedville, E. R. Co., Lewistown, Pa.

Metropolitan West Side Elec. Ry. Co., Chicago, Ill.
Mullins, W. H., Co., Salem, Ohio
Ohio Steel Foundries, Lima, Ohio
Ohio Box Board Co., Rittman, Ohio
Pittsburgh Seamless Tube Co., Beaver Falls, Pa.
Trumbull Mfg. Co., Warren, Ohio
Penn Iron & Coal Co., Canal Dover, Ohio.
Tide Water Pipe Co. (11 Pumping Stations.)

MISCELLANEOUS MANUFACTURING BUILDINGS

American Steel & Wire Co., Rankin, Pa.
Bethlehem Steel Co., So. Bethlehem, Pa.
Cambria Steel Co., Johnstown, Pa.
Illinois Steel Co. (6 shops), Joliet, Ill.
Indiana Steel Co. (5 shops), Gary, Ind.
Mohawk Gas Co., Schenectady, N. Y.
Manufacturers Junction R. R. Co., Hawthorne, Ill.
National Enameling & Stamping Co., Granite City, Ill.
Nichols Copper Co., Laurel Hill, L. I.
Ohio Salt Co., Rittman, Ohio
Penna. Malleable Co., McKees Rocks, Pa.
Piermont Paper Company, Piermont, N. Y.
Rodefer Glass Co., Bellaire, Ohio
Standard Portland Cement Co., Leeds, Ala.
Solvay Process Co., Detroit, Mich.
Ulster Iron Works, Dover, N. J.
Youngstown Sheet & Tube Co., Youngstown, Ohio

United States Gypsum Co.

Manufacturers of

Gypsum Wall Plasters and Other Gypsum Fireproof Products

General Offices: MONROE STREET AND FIFTH AVENUE
CHICAGO, ILL.

Sales Offices

NEW YORK, N. Y., 1170 Broadway
CLEVELAND, OHIO, Schofield Building

CHICAGO, ILL., 205 West Monroe Street
MINNEAPOLIS, MINN., Lumber Exchange

Sole Distributors for Canada: CANADIAN GYPSUM COMPANY, LTD., TORONTO

Mills at All Gypsum-Producing Centers in the United States

PRODUCTS—Gypsum Wall Plasters, Neat Cement, in following Brands: "ALABASTER," "BAKER," "BIG FOUR," "ELDORADO," "FLINT," "GRANITE," "IMPERIAL," "IVORY," "O. K.," "PYRAMID," "ROCK," "ZENITH"

Prepared (Machine-mixed with Sand) Gypsum Wall Plasters: "ADAMANT"—The Perfection of Wall Plaster, "ALABASTER," "BAKER," "BIG FOUR," "DIAMOND," "FITZGERALD," "FLINT," "GRANITE," "IMPERIAL," "IVORY," "ROCK," "ZENITH"

Wood Fibre Gypsum Wall Plasters: "ALABASTER," "BAKER," "FLINT," "GRANITE," "IMPERIAL," "IVORY," "ROCK," "ZENITH"

U. S. G. BOND PLASTER for Concrete Interior Walls and Ceilings.

Prepared Trowel Finishes: "ADAMANT" (White, Gray and Slate Colored), "IMPERIAL," "IVORY," "ROCK," AND "UNIVERSAL"

Prepared Sand Float Finishes: "ADAMANT" (White and Gray), "IMPERIAL," "IVORY," "ROCK," AND "SILICO"

CAEN STONE FINISH—A reliable substitute for genuine Caen Stone

"CEMENTICO"—A sanitary decorative Wall Coating

"PYROBAR" GYPSUM TILE—A fireproof Material for Partitions, Furring, etc.

"GYPSINITE"—A fireproof studding

"ADAMANT" EXTERIOR PLASTER—A Plaster for Stucco Exteriors

"SACKETT" PLASTER BOARD—A fireproof lathing Material



TRADE MARK

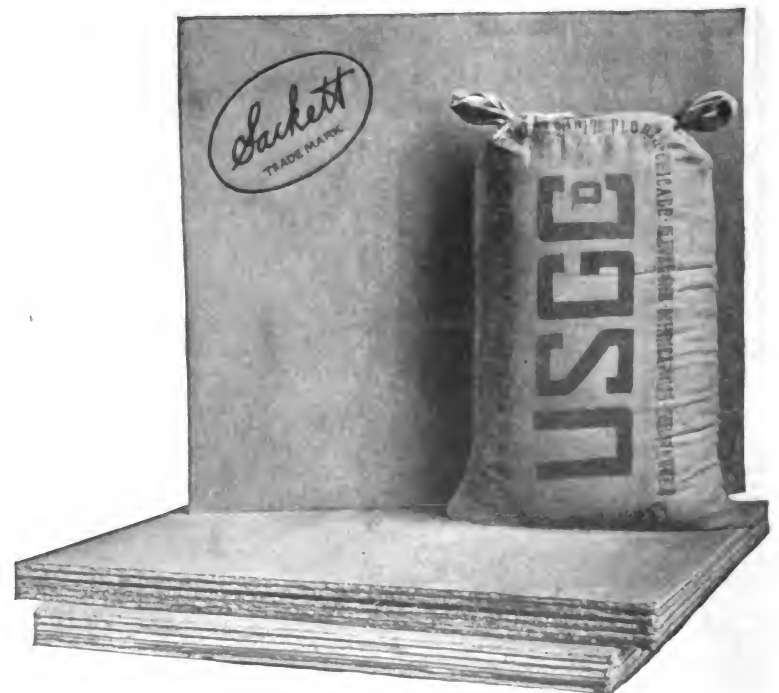
Sizes: Made in sheets 32 x 36 inches (8 square feet).

Thickness and weights:

- (a) $\frac{1}{4}$ inch (named Standard Board). Weight $1\frac{1}{2}$ lbs. per square foot, or 12 lbs. per board.
- (b) $\frac{3}{8}$ inch (named Perfected Board). Weight 2 lbs. per square foot, or 16 lbs. per board.
- (c) $\frac{1}{2}$ inch. Weight $2\frac{3}{4}$ lbs. per square foot, or 22 lbs. per board. Made to comply with building laws affecting certain kinds of construction.

Sackett Plaster Boards are shipped ready to be nailed direct to the studding, furring or beams.

Walls and Ceilings lathed with Sackett Plaster Boards dry out in one-half the time required as when ordinary lath is used, because less than one-half the quantity of water is required in plastering. Less damage will result from warped and twisted trim and woodwork through the moisture ordinarily used in plastering being reduced to the minimum—Sackett absorbs the moisture and keeps it away from the woodwork.



Every sheet of Sackett Plaster Board is stamped "Sackett," and U. S. G. Wall Plaster comes in bags stamped as above illustrated.

SACKETT PLASTER BOARD—This modern fireproof successor of wood and metal lath is extensively used in the construction of all classes of buildings where plastered walls and ceilings are required. SACKETT is a lathing material only, and should be applied strictly according to our specifications in order to insure the best results.

It is a non-conductor of heat, cold and sound. At moderate cost we offer a material which embodies both a fire protection and a superior lathing free from the defects of common construction.

SACKETT can be easily cut with an ordinary saw, or may be scored with the point of a hatchet and broken over a straight edge.

TECHNICAL DESCRIPTION—Sackett Plaster Board is a composition of alternate layers of pure calcined Gypsum and strong fibrous felt.

"A.B.C." SYSTEMS

Continued on next page

Walls and Ceilings made of Sackett Plaster Boards and U. S. G. Plaster will show no cracks or defects other than those caused by settlement of the building or the shrinkage of timber. The plaster can not fall because the adhesion between the plastering material and Sackett Plaster Boards is perfect.

The superior insulating qualities of SACKETT make houses warmer during cold weather, thus reducing fuel bills, and insulates against heat, making the building more comfortable during the summer's heat. Used extensively also, in the place of lumber, for outside sheathing under weather boards.

Sackett Plaster Boards are accepted by Underwriters and Building Departments in many cities for slow-burning construction on the same basis as metal lath. They are recognized as being an efficient and economical fireproofing for partitions, ceilings, between floors, under roof boards, and for protection of exposed wooden surfaces in mills, warehouses and industrial structures.

FACILITIES—Sackett Plaster Boards are carried in stock by up-to-date building material dealers everywhere. Our mills have a capacity of over one million square feet per day. The mills being located at widely separated points enables us to supply our products promptly and economically throughout the United States.

COST—The cost is little or no more than good work on wood lath, and less than that on metal lath, lath and plaster coat together.

SUMMARY OF REMARKABLE ADVANTAGES—1. Sackett Plaster Board combines lathing and fireproofing; 2. It is non-conductor of heat, cold and sound; 3. Applied quickly, it speeds construction; 4. It increases value and comfort of buildings; 5. Reduces fuel bills; 6. It does not contract, expand, warp or buckle; 7. It is stainproof; 8. Therefore, no plaster cracks or lath stains; 9. Saves labor in lathing, and material and labor in plastering; 10. Avoids warping of framing and trim by greatly reducing the plaster moisture in buildings during construction; 11. Can be easily cut or scored and broken into any shape to suit conditions; 12. An efficient insulator or fire retardent.

REFERENCES—Sackett Plaster Boards have been successfully used during the past 17 years in thousands of buildings of all classes, including cottages, prominent hotels, costly residences, churches, theaters, etc. Addresses gladly furnished on request.



PLASTERING SPECIFICATIONS FOR "SACKETT" PLASTER BOARD—

GROUND—To be not less than $\frac{3}{4}$ inch for Standard Board ($\frac{1}{4}$ "), and not less than $\frac{7}{8}$ inch for Perfected Board ($\frac{3}{8}$ ").

LATHING—To be "Sackett" Plaster Board. (Either $\frac{1}{4}$ " Standard or $\frac{3}{8}$ " Perfected Board, as preferred by the architect.)

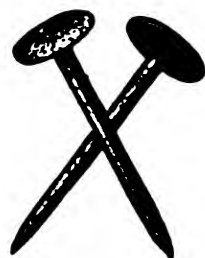
SPACING—Boards must be spaced not less than $\frac{1}{4}$ inch apart on all sides, and each edge must have a bearing on the stud of not less than $\frac{3}{4}$ inch.

NAILING—Nail boards directly to stud-ding, furring or joists.

First nail entire middle of board, then outer edges.

NAILS USED—In applying to wood stud-ding, furring or joists use $1\frac{1}{4}$ inch, 11 $\frac{1}{2}$ gauge, 7-16 inch head wire nails, set four (4) inches apart, with each nail driven home firm and tight. (We carry these nails in stock.)

In applying to "Gypsinite" (Gypsum Fire-proof Stud) use $1\frac{3}{4}$ inch, 11 $\frac{1}{2}$ gauge, 7-16 inch head wire nails, set four (4) inches apart, with each nail driven home firm and tight. (We carry these nails in stock.)



SACKETT NAIL
Actual Size for Wood
Studding or Joists

BREAKING JOINTS—Joints must be broken horizontally on the walls and at right angles with the ceiling joists. Best results on ceilings requiring leveling are obtained by furring with $\frac{1}{4}$ x 2-inch furring strips set on 8 or 12-inch centers.

Perpendicular joints on opposite side of partitions must not be on same stud as on first side, but should come on the next stud, thus obtaining greater rigidity.

DO NOT WET BOARDS—"Sackett" Plaster Board should not be wet before applying plaster, as the bond between the plaster and the dry board is perfect.



APPLYING SACKETT PLASTER BOARDS AND
PLASTERING SAME

PLASTERING—To be United States Gypsum Company's Plaster, mixed and applied according to directions of the manufacturer.

BASE COAT—Do not wet "Sackett" Plaster Board before applying plaster, as the plaster will adhere perfectly to the dry boards.

First thoroughly fill the joints between the boards, using regular base coat plaster. By doing this a perfect bond is formed between the plaster in the boards and the base coat, which will avoid any cracking at the joints. Follow up with application of the base or browning coat, fill out to grounds and darby to a straight and even surface, ready to receive the finish coat. Darby lightly and use water sparingly.

Special Note—Plaster must be applied to cover board full to grounds specified. A perfect wall cannot be secured by using thin base coat, nor by use of finish coat alone.

FINISH COAT—Trowel finish, where called for, to be United States Gypsum Co.'s Prepared Trowel Finish, brand, mixed and applied according to directions of the manufacturer.

Sand Float Finish, where called for, to be United States Gypsum Co.'s Prepared Sand Float Finish, brand, mixed and applied according to the directions of the manufacturer.

"ADAMANT" WALL PLASTER—The highest grade of wall plaster produced. We make a special plaster for each purpose under this brand, viz., base coats for Sackett Plaster Board, wood lath, wire or expanded metal lath, and for brick or tile; white and gray trowel finishes for walls and slate-colored finish for wainscoting and blackboards; also, white and gray sand-float finishes. Ready for use. Nothing to be added but water.

"ADAMANT" EXTERIOR PLASTER—For Stucco Exteriors. Machine-mixed. Ready for use. Except for some of the finishes, nothing to be added but water. It has great elasticity and adhesiveness. Strong as Portland Cement.

"U. S. G." WOOD-FIBER PLASTERS—A plaster of greater bulk, tougher and more elastic than Cement Plaster, producing a wall of lighter weight per yard. Demand rapidly increasing.

ESTIMATES, ETC.—On receipt of proper specifications, estimates will be sent. Also, booklets, samples or further information will be mailed promptly upon application.

CLASSIFICATION PAGE OF
SECTION 8

Burnt Clay Structural Products

(Floor and Wall Tile see Section 24)

Section Synopsis

A. BRICK. Common Building, all manufactures; Pressed Face or Front, all kinds, white-glazed, color-glazed, enameled, fancy effects and rough-face Brick; Molded and Ornamented Brick; Gauged Arches; Paving Brick; Fire Brick; Special-design Brick; Cupola Lining; Glass Brick; Molded Brick Products

B. FIREPROOF BUILDING BLOCKS. Dense and Porous Blocks, for floors and partitions; Hollow Brick; Furring Tile, Book Tile, for roofs; Column Furring; Special Interlocking Wall Blocks; Floor Arch Systems of special reinforced design; Application to Domestic Architecture

C. Sewer and Drain Pipe; Fittings and Fixtures; Sub-soil Drainage and Agricultural Tile; Flue Pipe; Chimney Pots and

Caps; Glazed Copping; Common Paving Tile; Quarry Paving Tile; Bakers' Oven Tile; Underground Electrical Conduits

D. ROOFING TILE. Spanish Pattern and Shingle Tile, Hips, Ridges, Finials, etc., plain and glazed

E. FLAT-TILE COHESIVE ARCH AND VAULT CONSTRUCTION. Systems and Materials

F. ARCHITECTURAL TERRA COTTA AND FAIENCE. Plain, Ornamented, Natural Shade, Colored, Polychrome; White-glazed, high or matt effects; Color Glazes, Architectural Faience; Panels; Pattern Tile, Fireplaces, Mantels; Drinking Fountains; Ornamental Decorative Products

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX		REGULAR CLASSIFICATION	
A	1	Common building brick:—	
	2	Sand-lime, dry-pressed	
	3	Shale, dry-pressed	
	4	Soft-mud	
	5	Stiff-mud, hydraulic-pressed	
	6	Wire-cut	
	7	Pressed face or front brick:—	
	8	American standard, size	
	9	Black headers	
	10	Dry-pressed	
	11	Enameled brick, white, colors, uniform, mottled	
	12	Flash brick	
	13	Gauged arch, to order	
	14	Hydraulic-pressed	
	15	Impervious	
	16	Iron spot	
	17	Molded and ornamental, general building	
	18	Norman, size	
	19	Old English, size	
	20	Oriental wire-cut	
	21	Pompeian Roman, size	
	22	Porcelain face	
	23	Rain-washed stretchers, Harvard work	
	24	Repressed down-draft stretchers	
	25	Repressed up-draft stretchers	
	26	Rough texture, rustic, ruffled, etc.	
	27	Salt-glazed, high, matt	
	28	Sand-lime shale	
	29	Soft-mud	
	30	Stiff-mud	
	31	Vitrified	
	32	Waterstruck, Harvard work	
	33	White-glazed opaque, matt, high	
	34	Wire-cut, Astrakhan	
		B	
		33	Sundries:—
		34	Cupola lining
		35	Firebrick, standard and special shapes
		36	Glass brick, face, plain, molded
		37	Glass partition brick
		38	Magnesia brick, blocks, furnaces
		39	Paving brick, clinkers
		40	Radial chimney brick, corrugated
		41	Raggle brick
		42	Special shapes, for special purposes
		43	Vitrified paving
		44	Building blocks, fireproof, dense, porous:—
		45	Column furring
		46	Book tile, for roofs
		47	Floor arches, standard design
		48	Floor arches, special, reinforced
		49	Partition blocks
		50	Wall blocks, special interlocking
		51	Exterior wall construction, special design
		52	Hollow brick, wall lining
		C	
		70	Bakers' oven tile, regular, patent design
		71	Chimney pots and caps
		72	Drain tile, unglazed, agricultural, sub-soil, etc.
		73	Electrical conduits, underground, vitrified tile
		74	Flue pipe and fittings, plain, glazed
		75	Glazed coping
		76	Paving tile, ordinary, vitrified
		77	Quarry tile, paving, flooring
		78	Sewer pipe, fittings, traps, etc., plain, glazed
		D	
		90	Roofing tile:—
		91	Shingle tile, plain, glazed
		92	Spanish patterns, various styles, plain, glazed
		93	Trimming, hips, ridges, finials, plain, glazed, to match tiles
		E	
		100	Flat-tile cohesive construction:—
		101	Arches, vaulting, domes, stairs, soffits, etc., material and design
		F	
		110	Architectural terra cotta:—
		111	Design work, pattern tile, panels, etc. in natural-shade, mono-colored, plain, glazed
		112	Drinking fountains, vases, figures, medallions, tablets, garden pottery, etc.
		113	Faience, polychrome high-glazed
		114	Fireplaces, mantels, and similar decorative architectural features
		115	Polychrome, matt-glazed
		SPECIAL CLASSIFICATION	
		Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
		121	Ceramic tile, floor, wall, ceiling, etc., plain encaustic, glazed, unglazed, etc. (S. 24)
		122	Enameled wall tile, extra thick (S. 24)
		123	Fire clay (S. 8 C)
		124	Pipe welding and bending (S. 28 C)
		125	Tall brick chimneys, engineering (S. 2 B)

TRADE NAMES AND BRANDS						Sub-Index Numbers						Sub-Index Numbers					
Cat. No.	Manufacturers having Catalog data in this Section	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150	Cat. No.	Manufacturers without Catalog data	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150				
	"Hill Specials," red face brick "Old English," red stretchers "Phenix," No. 1 fire brick "Rain-washed," red stretchers "Sayre & Fisher," No. 1 fire brick "Taylor," red face brick "Radial," brick (tall chimneys), Catalog A 5																
A 3	Tiffany Enamel Brick Co. Chicago, Ill.	6 9 18 17 19				122		Abingdon Paving Brick & Tile Co. Abingdon, Ill. Acme Pressed Brick Co..... Fort Worth, Texas Adams Brick Co..... Indianapolis, Ind. Akron Roofing Tile Co..... Akron, Ohio Akron Vitrified Clay Mfg. Co. Akron, Ohio Alton Brick Co..... Alton, Ill. Altoona Vitrified Brick Co... Iola, Kans. Alumina Shale Brick Co.... Bradford, Pa. American Enameled Brick & Tile Co. New York, N. Y. American Terra Cotta Ceramic Co. Chicago, Ill. Anderson Bros..... Taylorville, Ill. Anspach & Son, J. P..... Edgerton, Ind. Armstrong & Fleischman.... Dunkirk, N. Y. Ashland Fire Brick Co..... Ashland, Ky. Atchison Paving Brick Co.... Atchison, Kans. Avon Milling & Mfg. Co..... Avon, Ill. Bannon Sewer Pipe Co., P... Louisville, Ky. Barkwill Brick Co..... Cleveland, Ohio Baumgartner & Co..... Chatfield, Ohio Beaver Clay Mfg. Co..... New Galilee, Pa. Belt Line Brick Co..... Minneapolis, Minn. Bessemer Fire Brick Co..... Birmingham, Ala. Bessemer Limestone Co..... Youngstown, Ohio Betson Plastic Fire Brick Co. Rome, N. Y. Bible Pipe Co..... Macon, Ga. Blackfox Brick Co..... Pittsburgh, Pa. Borgner Co., Cyrus..... Philadelphia, Pa. Boulder Pressed Brick & Lumber Co. Boulder, Colo.	13 18 2 7 8 10 14 3 8 9 3 29 7 8 29 3 8 12 29 2 8 15 9 3 55 58 33 34 38 42 33 34 39 41 4 7 29 3 33 34 71 74 75 78 3 58 59 4 58 18 11 14 24 1 33 34 29 32 38 42 34 4 74 75 78 34 3 27 33 34 39 41 2 .	34 90 42 32 38 42 90 91 92 42 32 38 42 110 61 72 74 71 72 74 75 76 78 70 112 72 72 41 70 70 74 75 78 70							
F 1	Atlantic Terra Cotta Co. New York, N. Y.				110 111 112 113 114												
C 1	Clermont Sewer Pipe Co. New York, N. Y.		34 37	73 74 75 78		123											
A 2	Columbus Brick & Terra Cotta Co., The Columbus, Ohio	1 2 6 8 11 13 15 16	32														
E 1	Comerma Co., The New York, N. Y.					100											
A 4	Glass Brick Co., The Pittsburgh, Pa.		35 36														
A 5	Kellogg Co., M. W. New York, N. Y.		39			124 125											
A 1	Sayre & Fisher New York, N. Y.	3 4 5 6 7 9 10 11 13 14 17 18 20 21 22 23 24 27 28 30	32 34	61													
SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.																	
American Encaustic Tiling Co., Ltd. S. 24, Cat. 3 (Enameled wall tile, extra thick)																	
See also the catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES.																	

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
Bradford Pressed Brick Co.... Bradford, Pa.	2 4 8 12 13 15 18 29	32 57	61	113		Chattanooga Sewer Pipe & Fire Brick Co. Chattanooga, Tenn.		33 34 54 55 56 57 58 60	61 71 72 73 74 75 78			Conkling - Armstrong Terra Cotta Co. Philadelphia, Pa.				110 111 112 113 114	
Brockett Cement Co..... Kansas City, Mo.		33 34 40 41	70 72 74 75 78			Chestnut Ridge White Brick Co. New York, N. Y.	2 4 7 8 10 13 14 24 25 29	32 38 42				Copeland-Inglis Shale Brick Co. Birmingham, Ala.	7 10 18 29	42			
Brook Terra Cotta Tile & Brick Co. Brook, Ind.		54 55 56 58	61 72 74			Chicago Sewer Pipe Co..... Brazil, Ind.			72 74 75 78			Coshocton Brick Co..... Coshocton, Ohio	13 14				
Buckeye Fire Clay Co..... Uhrichsville, Ohio			74 75 78			Church Quarry Co..... Sibley, Mich.	1					Crume Brick Co..... Dayton, Ohio	1				
Buffalo Foundry Supply Co.. Buffalo, N. Y.		33 34				Cincinnati Roofing Tile & Terra Cotta Co. Cincinnati, Ohio			90 91 92			Dallas County Brick & Tile Works Adel, Iowa	7 13 24 29	32 60	61 72 74		
Building Improvement Co... New York, N. Y.		59 60				Clark & Son, Wm. Wirt..... Baltimore, Md.	1 2 3 4 7 8 9 10 11 12 13 14 17 18 20 21 22 23 24 25 27 29	31 32 33 34 38 39 40 41 42 54 55 56 58 59	61 70 71 72 73 74 75 76 78 90	91 92 100 110 111 112 113 114		Daubenmire, C. E..... Union City, Ind.			72		
Burke Brick Co..... Rochester, N. Y.	6	54 55 56 57 58 59	61	110		Clark & Son, N..... San Francisco, Cal.	4 10 11 12 14 15 24	32 33 34 39 54 55 56 58	61 71 72 75 78	91 111 112 113 114		David City Steam Brick Yards David City, Neb.	3				
Bush & Co., W. G..... Nashville, Tenn.	7 8 10 12 18	32				Cincinnati Roofing Tile & Terra Cotta Co. Cincinnati, Ohio			90 91 92			Davis Fire Brick Co..... Oak Hill, Ohio		33 34 41			
Campfield Raggle Block Co.. Richmond, Ind.		40	75			Clark & Son, N..... San Francisco, Cal.	4 10 11 12 14 15 24	32 33 34 39 54 55 56 58	61 71 72 75 78	91 111 112 113 114		Dawson Brick & Tile Co... Springfield, Ill.	3	54 55 56 58	72		
Canon Brick & Tile Co..... Canon City, Colo.	2 8 14	33 34 41	72	100		Clark Co., W. J..... Salem, Ohio	2					Decatur Brick Co..... Decatur, Ill.	7 10 13				
Canton Pressed Brick Co.... Canton, Ohio	2 3 4 7 8 10 11 13 14 15 24 25 29	32 38 42	61			Clay Products Co..... Sioux City, Iowa	1 4 6 7 8 10 13 14 15 24	32 34 38 41 42 55 56 57 58	61 72 74 76	113		Denison Fireproofing Co.. Mason City, Iowa		54 56 57 60	61		
Canton Tile Hollow Brick Co. New Bethlehem, Pa.		54 56 57 58				Cleveland Brick & Clay Co.. Cleveland, Ohio	2 13 29	32 38 42				Denny-Renton Clay & Coal Co. Seattle, Wash.	3 7 8 14 24 29	32 34 38 41 42 58	71 72 73 74 75 78	110 114	
Capital City Vitrified Brick & Paving Co. Topeka, Kans.	2 4 10 13 29	38 42				Clippert & Bro. Co., Geo. H... Detroit, Mich.	3		61			DeNoyelles Brick Co Haverstraw, N. Y.	3				
Carroll & Sons, H. C..... Philadelphia, Pa.	7					Coffeyville Vitrified Brick & Tile Co..... Coffeyville, Kan.	2 4 6 7 8 10 13 15 29	32 34 38 41 42				Denver Fire Clay Co Denver, Colo.		33 34			
Carter, Black & Ayers, Inc... New York, N. Y.	1 7 8 9 10 11 13 14 15 24 27 29	31 32 42 60				Columbus Contractors Sup- ply Co. Columbus, Ohio	4 10 13 29	32 72				Denver Sewer Pipe Co... Denver, Colo.	4 8 10 12 14 18 25	32 33 34 39 41 42 58	61 70 72 76 78		
Carter, F. R..... Peoria, Ill.	2 3 4 7 13 18	32 38 42 58	61			Cleveland Brick & Clay Co.. Cleveland, Ohio	2 13 29	32 38 42				Des Moines Clay Mfg. Co Des Moines, Iowa	4 10 14 18 25	58			
Cary Brick Co..... Mechanicsville, N. Y.	3					Clippert & Bro. Co., Geo. H... Detroit, Mich.	3		61			Detroit Roofing Tile Co Detroit, Mich.			90 91 92		
Center Brick & Clay Co..... Orviston, Pa.	8 9					Coffeyville Vitrified Brick & Tile Co..... Coffeyville, Kan.	2 4 6 7 8 10 13 15 29	32 34 38 41 42				Diamond Brick Co Oak Hill, Ohio		56 58	61		
Centerville Brick Co..... Centerville, Iowa	2					Cleveland Brick & Clay Co.. Cleveland, Ohio	2 13 29	32 38 42				Diamond Fire Brick Co. Canon City, Colo.	14	33 34			
Champlain Brick Co..... Mechanicsville, N. Y.	3					Clippert & Bro. Co., Geo. H... Detroit, Mich.	3		61			Dickey Clay Mfg. Co., W. S Kansas City, Mo.		34 54 55 56 57 58 60	70 71 72 73 74 75 78		
Chaska Brick & Tile Co..... St. Paul, Minn.	3 27		61			Coffeyville Vitrified Brick & Tile Co..... Coffeyville, Kan.	2 4 6 7 8 10 13 15 29	32 34 38 41 42				Eastern Clay Goods Co. Boston, Mass.		33 34	70 72 73 74 75 78		
Chattahoochee Brick Co.... Atlanta, Ga.		38				Colfax Pressed Brick Co... Denver, Colo.	2 7 8 10 14 15 18 24	32 58				East Ohio Sewer Pipe Co... Irondale, Ohio		32 34	71 72 73 74 75 78		

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Evans Clay Mfg. Co..... Uhrichsville, Ohio		33 34	71 72 74 75 78			Griffin Press Brick Co..... Griffin, Ga.	3					Jeffersonville Brick Co..... Jeffersonville, Ind.	4		61	
Everhard Co..... Massillon, Ohio	14					Grueby Faience Co..... So. Boston, Mass.				111 112 113		Kalo Brick & Tile Co..... Kalo, Ind.	3 29	58 60	72	
Farnham Brick Co..... Brickton, Minn.	4	32				Guastavino, & Co., R. New York, N. Y.				100		Kankakee Tile & Brick Co.. Kankakee, Ill.	3	58	72	
Federal Clay Products Co.... Mineral City, Ohio	4 10 13 18 25	33 34	74 75			Hall & Co., John A..... Tiffin, Ohio	27					Kansas Buff Brick & Mfg. Co. Buffville, Kans.	4 8 15			
Federal Terra Cotta Co..... New York, N. Y.				110 111 112 113 114		Hanover Brick Co..... Morristown, N. J.	4 7 13 18 22 24 29		61			Kasten & Schumuke Pressed Brick Co. Jackson, Mo.	8			
Fiske & Co..... New York, N. Y.	2 7 8 9 10 11 13 14 15 24 25 29	32 33 34 38 41	70	110 111 113 114		Harbison - Walker Refrac- tories Co. Pittsburg, Pa.	13 14 15 25 29	32 33 34 41	70			Keim Brick & Tile Co..... Louisville, Ill.	24			
Flagler & Allen..... Arlington, N. Y.	3					Harper-Hill Brick Co..... Seattle, Wash.		32 38 58	61			Kentucky Vitrified Brick Co. Louisville, Ky.	29	32 33 34 38 42 54 55 56	61 73 76	
Flint Sandstone Brick Co.... Flint, Mich.	1					Harrison, W. H..... Cleveland, Ohio	3					Ketcham, O. W..... Philadelphia, Pa.	8	34	61 90	91 92 94 110 111 112 113 114
Frazer, O..... Moweaqua, Ill.		32	72			Hartford Faience Co..... Hartford, Conn.				110 111 112 113 114		Keystone Fireproofing Co... New York, N. Y.		54 55 56 57 58		
Frederburg & Lounsbery.... New York, N. Y.	8 10 13 15 25 29	35				Heafner Tile Co., Edgar M... Bloomington, Ill.			72			Keystone Plaster Co..... Philadelphia, Pa.		57 58		
Frederick Brick Works..... Frederick, Md.	7 10 11 13 15 22 29	32 41 42				Heckard & Sons, M..... Canton, Ill.	2 7 29	38 42				Kittanning Clay Products Co.. Bradford, Pa.	3 8			
Galloway Terra Cotta Co.... Philadelphia, Pa.				111 113		Heilman Bros..... Tiffin, Ohio	3	58	72			Kline Brick Co., John..... Wickliffe, Ohio	3 29	32 42		
Garner Brick Works..... Haverstraw, N. Y.	3 7					Hilker Bros. Brick Mfg. Co.. Racine, Wis.	3 4 27	32				Knauff & Esterbrook..... Cleveland, Ohio		33 34		
Gast, A. A..... Akron, Ind.	3 27		72			Hocking Valley Fire Clay Co.. Nelsonville, Ohio	25			113		Knoxville Brick Co..... Knoxville, Tenn.	4 8 15			
Gautier & Co., J. H..... Jersey City, N. J.		33 34				Hocking Valley Products Co.. Columbus, Ohio	3 24 25	31				Kreischer Brick Mfg. Co..... New York, N. Y.	10 11 13 14 15 24 29	33 34 38 41 42	70 76	113
Georgia Vitrified Brick & Clay Co. Augusta, Ga.	29	33 34 39 41 42	75 78			Holmes & Co., F. B..... Detroit, Mich.	8 14 15 24 29	32 34 38 56 58		91 92		Kretz, Joseph..... Washington, Ind.	3			
Gethmann Brick Co..... Gladbrook, Iowa	8 10 25	58	72			Hood, B. Mifflin..... Atlanta, Ga.	7 10 13	42 55	90			Kriegshaber & Son, V. H.... Atlanta, Ga.	1 2 3 4 7 8 9 10 13 14 15 17 18 20 21 24 25 27 29 30	31 32 34 38 42 54 55 56 57 58 59 60	61 72 73 74 75 76 78 90	91 92
Giles, Albert E..... Peoria, Ill.	3					Howards' Co..... New Haven, Conn.		33 34	70			Kushequa Brick Co..... Kushequa, Pa.	13 18 22 24 29	32 42		
Gladding, McBean & Co.. San Francisco, Cal.	4 10	42 44				Huntingburg Dry Pressed Brick Co. Huntingburg, Ind.	2 7 8 10 11 14 15 22 23 25	31 34 39 41	110			Laclede-Christy Clay Prod- ucts Co. St. Louis, Mo.	33 34 39 40 44 45 46 47 48	70 71 72 74 75 78		
Gloninger & Co..... Pittsburgh, Pa.	10 13 14 15 17 22 24 29	42				Huntington Roofing Tile Co Huntington, West Va			90			La Junta Brick & Tile Co.... La Junta, Colo.	2 8	32 78		
Golden - Fairview Pressed Brick & Fire Clay Co. Denver, Colo.	2 4 8 10 14 16 22 29	32 33 34 39 41 42	61			Hydraulic Press Brick Co St. Louis, Mo.	8 9 15	34				Lake View Brick Co..... Chicago, Ill.	3			
Goodwin Tile & Brick Co.. Grand Junction, Iowa	3	58	72			Illinois Brick Co..... Chicago, Ill.	3 4									
Graves Shale Paving Brick Co. Birmingham, Ala.		42				Illinois Terra Cotta Lumber Co. Chicago, Ill.		54 55 56 57 58 59	61 90	100						
Great Eastern Clay Co..... New York, N. Y.		59				Indiana Brick Co..... Anderson, Ind.	3 27									
Greenpoint Fire Brick Co.. Brooklyn, N. Y.		33 34 42	70			Ironclay Brick Co..... Columbus, Ohio	8 10 14		113							

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La Salle Pressed Brick Co... La Salle, Ill.	2 8 10 11 15					Monmouth Brick & Tile Co... Monmouth, Ill.	13 29	32 61				Parker-Russell Mining & Mfg. Co. St. Louis, Mo.		33 34 54 55 56 57 58			
Leach, J. M..... Kokomo, Ind.	27					Moulding Co., Thomas..... Chicago, Ill.	9	34 38				Patton Clay Mfg. Co..... Patton, Pa.	2 4 8 13 14 24 29	32 33 34 38 39 41 42	70 71 74 75 76 78		
Lee Drain Tile Co., M. J.... Colfax, Ind.			72			Mound City Roofing Tile Co. St. Louis, Mo.			90 91 92			Pardee Works, C..... Perth Amboy, N. J.	9				
Lincoln Park Coal & Brick Co. Springfield, Ill.	7 8 10					Mumma Bros..... McGill, Ohio	4	61 72 90				Pearl Clay Products Co..... Bradford, Pa.	3 8				
Loftus, Martin..... Jefferson, Ohio	3					Murray Roofing Tile Co..... Cloverport, Ky.			90 92			Pearson Brick Co. Newcastle, Pa.	4 10 11 13 14 15 18 21 29	32			
Logan Clay Product Co..... Logan, Ohio		34 35	78			National Brick Co..... Chicago, Ill.		32 61				Peebles Paving Brick Co..... Portsmouth, Ohio		38 42			
Los Angeles Pressed Brick Co. Los Angeles, Cal.	8 9 15 24	33 34	90	91 92 112		National Fireproofing Co.... Pittsburgh, Pa.		40 42 54 55 56 57 58 59 60	61 71 72	100		Pennsylvania Fireproofing Co. Erie, Pa.		54 55 56 58 59 60	61		
Louisville Brick Co..... Louisville, Ky.	4 8 12					National Roofing Tile Co.... Lima, Ohio			90 92			Perrysburg Tile & Brick Co. . Perrysburg, Ohio			61 72		
Ludowici-Celadon Co..... Chicago, Ill.			90	91 92		New England Brick Co..... Mechanicsville, N. Y.	3					Person & Co., O. D... New York, N. Y.				91	
M. Coy Brick & Tile Co..... Augusta, Ga.	2 3 29	34 38				New England Steam Brick Co. Providence, R. I.	8 13	38				Pfotenbauer-Nesbit Co. New York, N. Y.	9 24				
McLain Fire Brick Co..... Pittsburgh, Pa.		34				New Jersey Terra Cotta Co... New York, N. Y.				110 112 114		Philadelphia & Boston Face Brick Co. Boston, Mass.	7 9 11 15		76 113		
McLeod & Henry Co..... Troy, N. Y.		33 34				New York Architectural Terra Cotta Co. New York, N. Y.				110 112		Pomona Terra Cotta Co Pomona, N. C.			74 75 78		
Mack Mfg. Co..... Philadelphia, Pa.	29 42	38 42				Niles Fire Brick Co..... Niles, Ohio		33 34 41				Popp, J. C..... Perryville, Mo.	3				
Martin Brick Co..... Pittsburgh, Pa.	9 29					Northern Clay Co..... Auburn, Wis.				110 112 114		Portsmouth Paving Brick Co. Portsmouth, Ohio		42			
Martin & Bro..... Washington, D. C.	3					Northwestern Terra Cotta Co. Chicago, Ill.				110 111 112 113 114		Portsmouth Refractories Co., Portsmouth, Ohio	14 18 27 29	32 33 34 38 39 41 42			
Martin & Van Oven..... Naperville, Pa.	4	58 72				Novelty Brick & Coal Co.... Newcomerstown, Ohio		32 42				Poston Paving Brick Co. Crawfordsville, Ind.	18	42			
Mason City Brick & Tile Co. . Mason City, Iowa	4	54 55 56 57 58 59 60	61 72			Oakes & Son, J..... Haverhill, Ohio			72			Presbrey Stove Lining Co Taunton, Mass.		33 34 41	70		
Maumee Brick & Tile Co.. Ft. Wayne, Ind.	7 14 24	32	61			Oak Hill Fire Brick & Coal Co. Oak Hill, Ohio		33 34 39 41				Progress Press Brick Co St. Louis, Mo.	3 7 8 9 10 11 12 13 14 15 24 25	39 41 60		113	
Maurer & Son, Henry..... New York, N. Y.		33 34 41 54 55 56 57 58 59 60	61 70 90	91 92 100		Oakland Pressed Brick Co... Fanesville, Ohio	8					Purinton Paving Brick Co. Galesburg, Ill.	22 29	38 42			
Mayer Co., C. P..... Bridgeville, Pa.	4 7 22 29	38 42				Ochs Brick & Tile Co., A. C.. Springfield, Minn.	3 13 27	32 34 39 54 57 58	61 72			Queen's Run Fire Brick Co. . Lock Haven, Pa.		33 34			
Menominee Brick Co..... Menominee, Mich.	1					Oconee Brick & Tile Co..... Milledgeville, Ga.	29	54 55 56 57 58	72			Red River Valley Brick Corp. Grand Forks, N. D.	3	34			
Merrick, Chas. H..... Syracuse, N. Y.	4 7	32 72	60			Ohio Brick Co. Toledo, Ohio	2 3 7 14					Red Wing Sewer Pipe Co. Red Wing, Minn.			74 75 78		
Merwin Brick Co., C. P..... Berlin, Conn.	3		61			Ohio Clay Co. Cleveland, Ohio		54 61				Reeve, Augustus Camden, N. J.	7 17	72 74	61 71 72 74 75 76 78		
Metropolitan Paving Brick Co. Canton, Ohio	24	32 38 42				Ohio Fire Brick Co. Oak Hill, Ohio		33 34									
Midland Terra Cotta Co..... Chicago, Ill.				110 111 112 113 114		Ohio Tile & Brick Co..... Ottawa, Ohio	4	32 58	61 72								
Miller, L..... Highland, Ill.	3 8 12 11	32 38	72			Old Bridge Enameled Brick & Tile Co. Old Bridge, N. J.				113							
Minzing, Fred..... Delphos, Ohio	3					Oliff, T..... Ohio, Mich.	3	32 58	61 72								
Missouri Fire Brick Co..... St. Louis, Mo.		33 34				Onondaga Vitrified Brick Co. Syracuse, N. Y.	3 7 10 29	32 61									
Moberly Paving Brick Co.... Moberly, Mo.	27 29	32 38 42				Osceola Silica & Fire Brick Co. Osceola Mills, Pa.		33 34									
Moellering, W. H. F..... Ft. Wayne, Ind.	3 27	39 41															

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Remmey Son Co., Richard C. Philadelphia, Pa.	25 29	33 34 39 41				South Memphis Brick Co.... Memphis, Tenn.	3 4 7 8 10 12 18 24 27					Union Sewer Pipe Co..... McKeesport, Pa.	4 13 29	42 58 74 78	71 74 78		
Richmond Brick Co..... New York, N. Y.	3					Springfield Paving Brick Co.. Springfield, Ill.	29	38 42	72			United Fire Brick Co..... Pittsburgh, Pa.	13 14	33 34 38 42	70 76		
Richwood Clay Co..... Richwood, Ohio			72			Standard Brick Co..... Belleville, Ill.	2 7 8					United States Sewer Pipe Co.. Pittsburgh, Pa.	29	34			
Robinson Clay Products Co.. Akron, Ohio			72 74 75 78			Standard Brick Co..... Macon, Ga.	3 8	38 58				United States Tile Co..... Parkersburg, W. Va.			76 90	91	
Rochester Sewer Pipe Co..... Rochester, N. Y.			73 74 75 77 78			Standard Brick Mfg. Co..... Evansville, Ind.	2 3					Upper Kittanning Clay Brick Co. Bradford, Pa.	3 8				
Rogers & Co..... Royersford, Pa.		33 34				Standard Sewer Pipe Co.. Rochester, N. Y.			73 75 78			Utah Fire Clay Co..... Salt Lake City, Utah	10 14 27 29	33 34 39 54 55 57 58 59 60	61 70 71 72 73 74 75 78		
Rome Brick Co..... Rome, Ga.	3					Standard Stone & Brick Co.. Bellaire, Ohio	4 7 10	38 42				Vigo Clay Co..... Terre Haute, Ind.		54 55 56 57 58	72		
Rookwood Pottery Co..... Cincinnati, Ohio				110 111 112		Steiger Terra Cotta & Pot- tery Works San Francisco, Cal.	2 4 7 8 10 11 13 14 15 17 18 21 22 24 25 29	32 33 34 39 40 41 44 45 47 50 56 60	61 70 71 72 73 74 75 78	110 111 112 113 114		Virdigris Valley Vittrified Brick & Tile Co. Neodesha, Kans.	7 13 18 22 24 29	32 38			
Rumsey, J. D..... Stryker, Ohio	3		72			Stevens, Frederick B..... Detroit, Mich.	10 13 14 20 24 25	31 32 34 55 58	61 70 72 75			Vulcan Brick Works..... Vulcan, Mich.	3 37				
St. Louis Terra Cotta Co..... St. Louis, Mo.				110 111 112 113 114		Stevens Sons Co., H..... Macon, Ga.		33 34 56 58 60	70 71 72 73 74 75 78			Wadsworth Brick & Tile Co.. Wadsworth, Ohio	2 7 10 13 29	32			
Salina Vittrified Brick Co..... Salina, Kans.	3					Stewart, J. I..... Belle Center, Ohio			72			Wagner, J. G..... Covington, Ohio	3		72		
San Jose Brick Co..... San Jose, Cal.	3 15 27	38 41				Stiles & Reynolds Brick Co.. North Haven, Conn.	3 7		61			Washburn & Co., U. F..... Haverstraw, N. Y.	3				
Savage Fire Brick Co..... Meyersdale, Pa.		33 34 38				Stowe-Fuller Co..... Cleveland, Ohio		33 34	70			Washington Brick, Lime & Sewer Pipe Co. Spokane, Wash.	4 7 8 9 10 11 12 13 15 24 25	32 34 58 59 78	72 74 75 78	110 111 112 114	
Savannah Brick Works..... Savannah, Ga.	1 8					Streator Clay Mfg. Co..... Streator, Ill.			71 72 74 75 78			Webster & Keyser..... Philadelphia, Pa.	3 7				
Scioto Fire Brick Co..... Sciotoville, Ohio		33 34				Suburban Brick Co..... Wheeling, W. Va.	4 14 29	32 34 42 59	61			West Barnstable Brick Co.. West Barnstable, Mass.	4 7 21				
Shamut Clay Mfg. Co..... Shamut, Elk Co., Pa.			73 75 78			Swank's Sons, Hiram..... Johnstown, Pa.	8 24	33 34 38				Western Brick Co..... Danville, Ill.	3 7 10 11 13 24 27 29	32 38			
Sharon Fire Brick Co..... Sharon, Pa.	29	32 33 34 41 42				Taylor Bros. Brick Co..... Redlands, Cal.	2					Western Terra Cotta Co..... Kansas City, Kans.				110	
Sheldon Brick & Building Supply Co. Urbana, Ill.	3 4 7 9 10 11 13 18 24 27 29	32 34 38 42 54 55 56 57 58	61 72			Taylor Sons Co., Chas..... Cincinnati, Ohio		33 34				Westwood Brick Co..... Cincinnati, Ohio	3 27				
Sioux City Brick & Tile Works Sioux City, Iowa		32 58	61 72			Townsend Brick & Contract- ing Co., T. B. Zanesville, Ohio	2 10 14 18	34 38 39 42 58	61			Whitacre Fireproofing Co.. Waynesburg, Ohio		39 41 54 55 56 57 58 59 60	61 72		
Sioux Falls Pressed Brick Co Sioux Falls, S. D.	1					Troy Fireproofing Co..... Detroit, Mich.		54 55 56 57 58 59	61			Whiting Foundry Equip- ment Co. Harvey, Ill.		33			
Soisson Fire Brick Co., Jos. Connellsville, Pa.	3 8 10 11 14 24 27 29	32 33 34 38 41 42	76			Tuna Valley Pressed Brick Co. Bradford, Pa.	3 8	34				Willard Co., C. E..... New York, N. Y.	8		76 90	91 92	
South Amboy Terra Cotta Co. New York, N. Y.				110 112 114		Uhl Pottery Co..... Evansville, Ind.	10 11 12	35				Wooster Shale Brick Co..... Wooster, Ohio	7 10 22 29	32 42			
Southern Clay Mfg. Co..... Chattanooga, Tenn.	4 7 13 18 24 29	32 38 42										Youngville Brick & Tile Co.. Bradford, Pa.	8	38			
Southern Sewer Pipe Cot..... Birmingham, Ala.		34 54 55 56 57 58 60	72 73 74 75 78									Zeeland Brick Co..... Zeeland, Mich.	3				

Sayre & Fisher Company

Manufacturers of All Kinds of Brick

General Offices

261 BROADWAY (CORNER WARREN STREET)

NEW YORK, N. Y.



BRICK WORKS OF THE SAYRE & FISHER COMPANY, SAYREVILLE (ON RARITAN RIVER), N. J.

PRODUCTS—FINE PRESSED FRONT BRICK; SPECIAL BRICK FOR ARCHES AND ORNAMENTAL WORK; SUPERIOR ENAMELED BRICK; PORCELAIN FACE BRICK; FIRE BRICK; HOLLOW BRICK, for fire-proofing Purposes.

COLORS AND STYLES—We manufacture Front Brick in a great variety of colors: White, Ocher, Light and Dark Buff, Red, Gray, Old Gold and Mottled, and other shades to order. This extensive range enables architects to select a material which, while fire-resisting and easily handled, shall permit them to lighten and beautify, and add strength and variety to, a street façade.

PORCELAIN FACE BRICK—For front-brick purposes.

SPECIAL BRICK—We manufacture these to meet architects' designs in any particular color or size. We produce

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Brick for Arches or Ornamental Work in any desired shape, plain or molded.

ENAMELED BRICK—We manufacture Superior Enameled Brick in large quantities. They are coming into more general use for a great variety of purposes, and are especially adapted for lining waiting-rooms of railroad stations, tunnels, markets, hospitals, engine and boiler rooms, kitchens, etc.

SHIPPING FACILITIES—The favorable location of our works at deep water on the Raritan River, N. J., enables us to load vessels of large draught.

Shipments by rail made direct to all points, connecting with any line of railroad.

EXPORT TRADE—We make a specialty of loading large vessels for export trade.

Continued on next page

RED BRICK DEPARTMENT

PRODUCTS—COMMON BRICK, SELECTED COMMON BRICK; "TAYLOR" BRICK AND "HILL SPECIALS" FOR FACING; "RAIN-WASHED," "OLD ENGLISH RED," REPPRESSED DOWN-DRAFT RED AND REPPRESSED UP-DRAFT RED STRETCHERS; BLACK HEADERS, AND HOLLOW BRICK; FIRE BRICK

"OLD ENGLISH" RED STRETCHERS—This product is something new and is about the size of the Old English Brick, made in dark red tone and measuring about $8\frac{1}{8}$ x $2\frac{7}{8}$ x 4 inches. Over six hundred thousand in the new Curtis Publishing Company's Building in Philadelphia; were selected by the architects after searching the Old World for ideas at once unique and artistic.

COMMON BRICK—Hard-burnt, dark red color. A very economical building brick for heavy construction work.

REPPRESSED DOWN-DRAFT STRETCHERS—These are of a uniform dark red color, and are a great seller. They were used in the new Astor Hotel, Broadway and 44th Street, also in the new Royal Insurance Building, William Street and Maiden Lane, New York, N. Y., and in the Royal Insurance Building, San Francisco, Cal.

REFERENCES AND SPECIAL STYLES—Millions of our Common Brick were used in the Hudson Terminal (Clinton & Russell, architects); Pennsylvania Terminal (McKim, Mead & White, architects), etc., New York City.

REPPRESSED UP-DRAFT STRETCHERS—Same as the Down-Draft, except that these show the dark kiln marks on the stretcher side, which gives a diversified effect. Used on St. Veronica School, Washington and Barrow Streets, New York, N. Y., and on St. James Rectory, Jay Street, Brooklyn, N. Y.

SELECTED COMMON BRICK—For facing. Of general dark red color and sufficiently varied in color and shape for "Harvard" work. These are very desirable for Colonial work.

BLACK HEADERS—Made to be used with the Selected Common Brick or Reppressed Stretchers for the "Harvard" effect if desired.

"TAYLOR" BRICK—These are also for facing. Sometimes called "Clinker Brick" because they are nearest the fire in the kilns and are burnt black and twisted. Very popular with some architects for residences, etc., such as the Heinsheimer residence (R. L. Daus, architect), Breezy Point, Far Rockaway, Long Island, N. Y.

HOLLOW BRICK—Both Stretchers and Headers of a very superior quality. They can be furnished in cargo lots.

"HILL SPECIALS"—Also for facing. A brick with a pinkish tone, made popular by Mr. Hill, of Hill & Stout, architects, and used by him on many buildings and residences, notably the Tichenor Stables on 60th Street, near Broadway, New York, N. Y.

FIRE BRICK—Two grades: No. 1 "Sayre & Fisher" and No. 1 "Phenix." Very desirable for boiler settings, furnace linings, etc., in all standard sizes.

SHIPPING FACILITIES—Shipments in cargo lots, via our fleet of barges and schooners or via rail to all points.

"RAIN-WASHED" STRETCHERS—These are laid either with or without Black Headers. A "chance" product caused by rain on the brick when in a green state on open yards. The Orpheum Theater, Brooklyn, N. Y.; Rogers, Peet Building, 13th Street, Fourth Avenue and Broadway, New York, N. Y., are faced with this brick.

EXPORT TRADE—We have such adequate and satisfactory facilities for shipment as well as such large and complete stock always on hand that our export trade has grown to large proportions and is still increasing.

"A.B.C." SYSTEMS

The Columbus Brick & Terra Cotta Company

MAIN OFFICE
COLUMBUS, OHIO

ESTABLISHED 1885

Works
UNION FURNACE, OHIO

AGENCIES

Atlanta, Ga., B. Miffin Hood
Birmingham, Ala., Brick Selling Co.
Boston, Mass., Waldo Bros.
Brooklyn, N. Y., Person & Co.
Buffalo, N. Y., John H. Black Co.
Charleston, S. C., Carolina Portland Cement Co.
Charleston, W. Va., Daniel Matthews
Charlotte, N. C., The Charlotte Brick Co.
Chattanooga, Tenn., Sloan & Co.
Chicago, Ill., S. S. Kimbell Brick Co.
Cincinnati, Ohio, L. H. McCammon Bros.
Cleveland, Ohio, Queisser-Bliss Co.
Council Bluffs, Iowa, The Council Bluffs Cement Co.
Dayton, Ohio, C. H. Lyon
Decatur, Ill., V. H. Parke & Son Co.
Denver, Colo., Geo. P. Heinz & Co.
Detroit, Mich., F. B. Holmes & Co.
Duluth, Minn., Paine & Nixon Co.
Grand Rapids, Mich., F. H. McDonald
Harrisburg, Pa., Northern Equipment Co.
Houston, Texas, F. B. Walcott
Indianapolis, Ind., C. H. Robertson
Jacksonville, Fla., Carolina Portland Cement Co.
Kansas City, Mo., Kansas Buff Brick & Mfg. Co.
Knoxville, Tenn., Chandler & Co.
Lexington, Ky., Louis Des Cognets & Co.
Lincoln, Neb., Nebraska Material Co.

AGENCIES

Louisville, Ky., W. J. Watkins & Co.
Lynchburg, Va., Adams Bros.-Paynes Co.
Milwaukee, Wis., Ricketson & Schwarz
Minneapolis, Minn., Johnson, Jackson & Corning
Montreal, Canada, David McGill
Nashville, Tenn., Fulcher Brick Co.
New Haven, Conn., Warner-Miller Co.
New Orleans, La., Mutual Brick & Supply Co.
New York City, Pfotenhauer-Nesbit Co.
Oklahoma City, Okla., National Builders' Supply Co.
Omaha, Neb., Sunderland Bros. Co.
Philadelphia, Pa., O. W. Ketcham
Pittsburg, Pa., James R. Pitcairn
Portland, Ore., P. L. Cherry Co., Inc.
Providence, R. I., James C. Goff Co.
Richmond, Va., J. Wilson Wood
Rochester, N. Y., Burke Brick Co.
St. Louis, Mo., National Pressed Brick Co.
St. Paul, Minn., Johnson, Jackson & Corning
Toledo, Ohio, Buckeye Builders' Supply Co.
Topeka, Kan., The Lumbermen's Supply & Material Co.
Vancouver, B. C., The Ritchie Contractors' Supply Co.
Washington, D. C., O. W. Ketcham
Wheeling, W. Va., Stevenson & Co.
Wichita, Kan., Lumbermen's Supply Co.
Winnipeg, Man., The Waite-Fullerton Co., Ltd.

PRODUCTS—HIGH-GRADE DRY PRESSED AND WIRE-CUT IMPERVIOUS FACING BRICK. WE MAKE A SPECIALTY OF ARCH AND ORNAMENTAL BRICK TO ORDER. EACH FLAT ARCH IS PACKED IN A SEPARATE BOX, READY TO BE LAID IN THE WALL WITHOUT SORTING

COLORS—Buff, Gray, Buff Speckled, Gray Speckled plain brick, and Buff and Gray Astrakhan wire-cut face.

KINDS—Standard and Norman sizes, plain and ornamental in Dry Pressed. Wire-cut in Standard size only.

EFFLORESCENCE—Our brick are free from efflorescence.

SPECIALTY—We make a specialty, and will carry large stock, of the buff and gray Astrakhan (rough face) brick. Notwithstanding the fact that the faces of these brick are rough,

the form of the brick is perfect, and they run very even in size, and are the best brick of this character on the market today.

We make three assortments of the Buff Astrakhan, namely: Buff Astrakhan, Onyx Astrakhan and Buff-Onyx Astrakhan; and three assortments of the Gray Astrakhan, namely: Slate Astrakhan, Granite Astrakhan and Flemish Astrakhan. The Flemish are very heavily flashed, almost to a brown, and are used mostly for Headers in the Flemish Bond.

PROMPT SHIPMENTS—We carry at all times a large and well-assorted stock, insuring prompt shipments.

CATALOGUES, SAMPLES, PRICES—Catalogues, samples and prices cheerfully furnished on application to main office or nearest agency.

Tiffany Enameled Brick Co.

1203 CHAMBER OF COMMERCE
CHICAGO, ILL.

Long Distance Telephone
Franklin 486

PRODUCTS—ENAMELED BRICK AND ENAMELED TILE for Exterior or Interior Work

TECHNICAL DESCRIPTION—The process of manufacture of the Tiffany brick is such that crazing and cracking do not appear in the enamel. This also applies to the Tiffany tile. This feature endorses them strongly for the purpose of exterior and interior construction in cities and elsewhere. The Tiffany brick and tile are absolutely fireproof, withstand the action of water and do not disintegrate.

The Tiffany brick is used for the wainscoting of government and bank buildings, laundries, bakeries, kitchens, swimming pools, gymnasiums, sanitariums, and Turkish bath establishments. These bricks have no superior. The different colors in which they can be made, make them exceptionally desirable for interior room construction, where durability and harmony of tone and color are required.

EFFECTS OF LIGHT AND SHADE—Colors are produced not only by the material used, but also by the degrees of heat they receive in burning, and it should therefore be borne in mind that slight variations in shade are unavoidable. If a slight variation should appear it is sometimes an advantage, than otherwise, for the beauty of the finished surface.

ENAMELED BRICK FOR BUILDING EXTERIORS—We make a specialty of high grade Enameled Brick for exterior facings of buildings of all kinds, from a one-story shop, inviting patronage by its cleanly appearance, to the imposing city skyscraper, such as the new Insurance Exchange Building illustrated herewith.

We cut and grind arches according to plans furnished us, but must have full and accurate details, including width of joints and reveals. Arches are packed in barrels, marked for identification, and, when necessary, sketches are sent as a guide for their proper laying.

TILE—We manufacture tile in all colors, in one size only (9 x 3 inches on enameled face, and 1½ inches in thickness). These tile are frequently used for wainscoting where it is desirable to save space.

SERVICE—To illustrate our ability to make deliveries 350,000 bricks, each wrapped separately, were delivered in 30 days for building illustrated here. This will give an idea of our capacity and ability to make delivery. Special sizes made to order.

SIZES OF BRICK

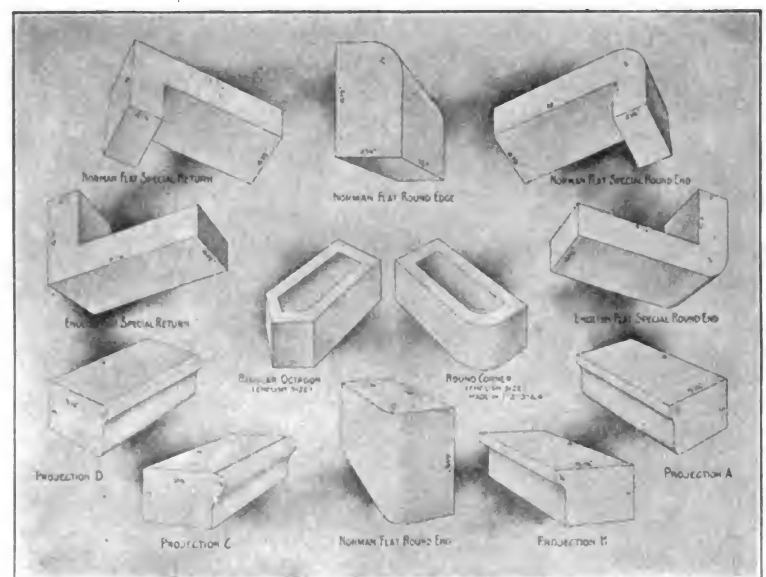
Name	Average Size	
	Enamel Face, Inches	Depth, Inches
American Stretcher.....	8 3/8 x 2 1/4	4 1/8
English Stretcher.....	9 x 3	4 1/2
Norman Flat Stretcher.....	12 x 4 1/4	2 1/4
Norman Stretcher.....	12 x 2 1/4	4
Roman Stretcher.....	12 x 1 1/2	4

GUARANTEE—We absolutely guarantee our brick and tile not to craze, crack, or disintegrate under any condition or change in temperature.

"A.B.C." SYSTEMS



INSURANCE EXCHANGE
D. H. Burnham & Co., Architects
The largest office building in Chicago. Faced with ivory shade Tiffany Enameled Brick.



A FEW SPECIMEN DESIGNS AND SHAPES

We specialize on the Highest Grade Enamel Brick of all Types for Exterior Facings of Buildings.

The Glass Brick Company

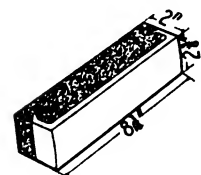
Office: Keystone Building
PITTSBURGH, PA.

National Factory
CONNELLVILLE, PA.

PRODUCTS—GLASS FACE BRICK in Standard and Special Shapes, Sizes and Colors
PARTITION BRICK

OUR SHAPES—Below is a selection of shapes of face and partition brick manufactured by us. The complete line contains over 300 shapes.

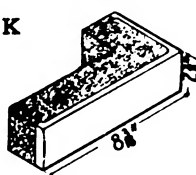
GLASS-FACED WALL BRICK



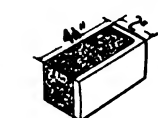
GLASS FACED
STRETCHER



GLASS FACED
HALF STRETCHER



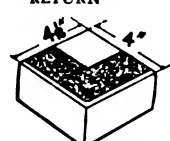
STRETCHER, 4" SQUARE
RETURN



HALF STRETCHER,
SQUARE END



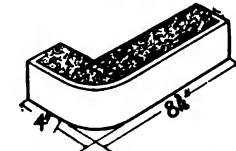
2" SQUARE END



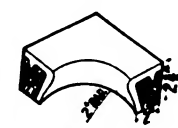
HALF 4" SQUARE
RETURN



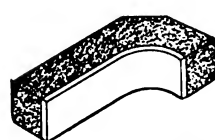
BULL NOSE, 2" RADIUS



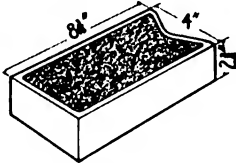
4" RETURN BULL NOSE,
90° 2" RADIUS



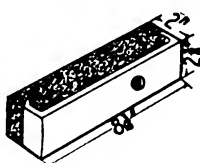
GLASS FACED ROUND
INSIDE ANGLE CAP



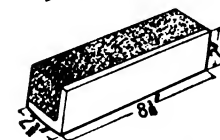
INSIDE ROUND ANGLE,
90° 2" RADIUS



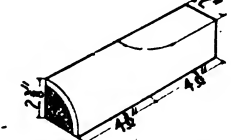
FULL LENGTH HEADER



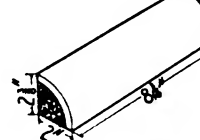
STRETCHER WITH 7/8" HOLE



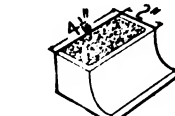
SIDE AND EDGE BRICK



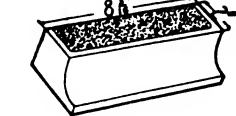
WINDOW TRIM ANGLE,
RIGHT



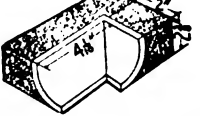
QUARTER ROUND



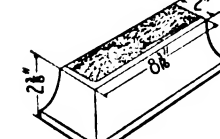
SANITARY BASE HALF
STRETCHER



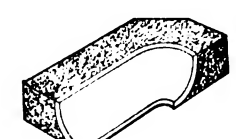
SANITARY BASE
STRETCHER



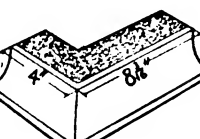
SANITARY BASE, SQUARE
INSIDE ANGLE



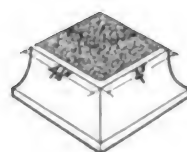
SANITARY BASE, SQUARE
OUTSIDE ANGLE, RIGHT
AND LEFT



SANITARY BASE,
ROUND INSIDE ANGLES,
RIGHT OR LEFT



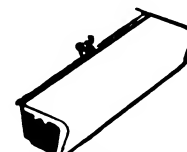
SANITARY BASE, 4" SQUARE
OUTSIDE ANGLES, RIGHT
AND LEFT



SANITARY BASE, HALF
SQUARE OUTSIDE, ANGLE



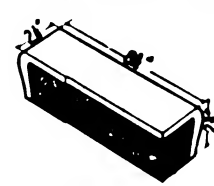
ROUND OUTSIDE ANGLE
S. B. FOR BULL NOSE



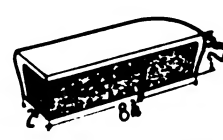
STANDARD CAP
STRETCHER



STANDARD CAP, SQUARE
INSIDE ANGLE

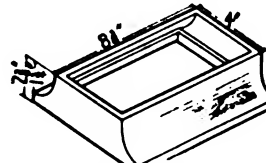


STANDARD CAP, SQUARE OUT-
SIDE ANGLE, RIGHT AND LEFT

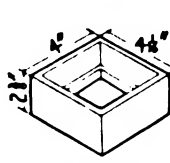


STANDARD CAP, ROUND
OUTSIDE ANGLE, LEFT

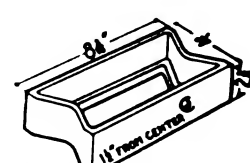
HOLLOW OR FILLED PARTITION BRICK



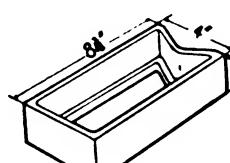
SANITARY BASE STRETCHER



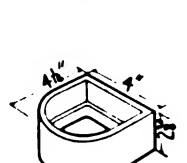
PARTITION HALF
STRETCHER



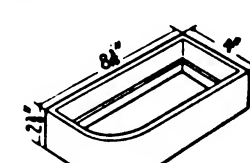
STRETCHER WITH 7/8" HOLE



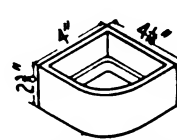
PARTITION BRICK,
SQUARE END



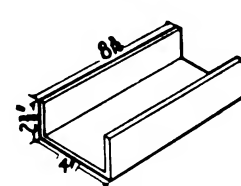
ROUND END PARTITION,
HALF



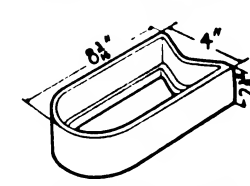
PARTITION BULL NOSE, 2"
RADIUS, SQUARE END



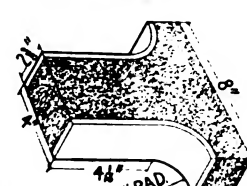
HALF BULL NOSE
PARTITION BRICK



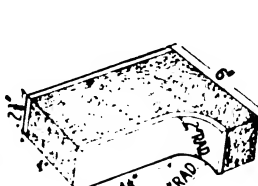
FLAT BOTTOM PARTITION



ROUND END PARTITION
BRICK, 2" RADIUS



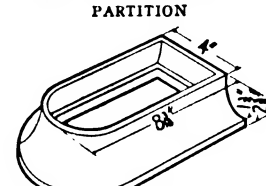
DOUBLE ROUND ANGLES
PARTITION



ROUND AND STRAIGHT
SIDE PARTITION



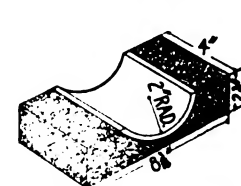
SANITARY BASE HALF
STRETCHER, ALSO
3/4 LENGTHS



SANITARY BASE PARTITION,
ROUND END



COPING, ROUND END



HALF GUTTER BRICK
WITHOUT LIP

Samples and complete Catalog showing 300 Shapes upon Request

"A.B.C." SYSTEMS

The M. W. Kellogg Co.

Manufacturers and Contractors

Branches
CHICAGO
454 Ry. Exchange Bldg.
PHILADELPHIA
18th and Market Streets
BOSTON
141 Milk Street
SALT LAKE CITY
52 Newhouse Building
INDIANAPOLIS
State Life Building

50 CHURCH STREET
NEW YORK, N. Y.
Pipe Factory: 91-117 West Side Avenue
JERSEY CITY, N. J.

Branches
PITTSBURGH
2350 Oliver Building
LOS ANGELES
545 Pacific Elec. Bldg.
Clay Works
SOUTH RIVER, N. J.
CLYMER, PA.
WAYNESBURG, OHIO
PORT WASHINGTON, OHIO
SALT LAKE CITY, UTAH
LOS ANGELES, CAL.

CHIMNEYS

RADIAL BRICK—The illustrations presented herewith show our Improved Corrugated Perforated Radial Brick, the best possible material for the construction of tall chimneys for factories, power plants, garbage destructors and smelters.

Scientific tests conducted at Lehigh University show that Corrugations give 62½ per cent. greater adhesion between the brick and mortar, and 310 per cent. greater uniformity of joints than straight-sided radial brick.

MATERIAL—Our radial brick with corrugated sides are manufactured from selected clays, mixed in accordance with our formula, and are burnt in specially-constructed kilns at temperatures best adapted for the purpose for which they are to be used.

The bricks are made in different lengths to give various wall thicknesses and to break the bond.

DESIGN—We design and build chimneys for any purpose, each particular case being individually considered in order that the design of the structure and the material used may be perfectly adapted to the work to be performed.

Our chimneys are not only *theoretically* but **practically safe**, and are backed by our guarantee of five years from date of completion.

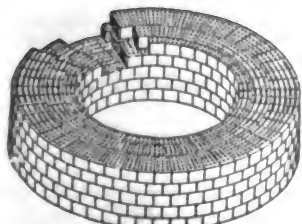
CONSTRUCTION—This item covers: Workmen employed, supervision exercised, and spirit controlling both. Our men are specially-trained chimney builders; those in whose charge the chimneys may come must, as a special requisite for such an important post, have been employed by us for several years in this work.

The thickness of walls is made by combining the different bricks as shown in cut. Each brick has sufficient overlap to form a good bond.

We absolutely insist and guarantee to break joints every third course, as shown by cut given herewith.

INFORMATION REQUIRED—In asking for prices please supply the following data:

1. Distance from track delivery or dock to chimney site;
2. Purpose for which chimney is to be used;
3. If for boilers, state type and total horse power;
4. Will economizers or stokers be installed?
5. Kind of fuel or coal to be used;
6. Height and internal top diameter;
7. Sketch showing relation of chimney to boilers and building;
8. What is the nature of the soil?
9. Will pumping be necessary during excavation?

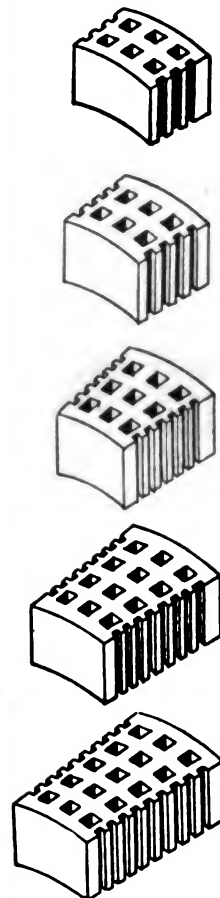


BRICK BOND-BREAKING JOINTS

"A.B.C." SYSTEMS



ERIE COUNTY ELECTRIC CO., ERIE, PA.
Height 250 ft., top diam. inside, 9 ft.



RADIAL BRICK DETAILS.
Vertical hollows, side corrugations.



EXAMPLE OF PIPE WELDING

PIPING

PIPE WELDING—A large portion of our business consists of welding outlets on pipe (as shown in cut below) and welding pipe end-to-end.

The material used for welding is the highest grade of open-hearth soft steel pipe, tough and strong and low in carbon. Wherever a weld is made, the metal is reinforced to from 50 to 300 per cent. greater than the original thickness.

The **BENEFITS** obtained by welding are: 1. Saving in maintenance due to great reduction in number of joints; 2. Saving in material and labor of erecting; 3. Saving in first cost of pipe-covering due to fewer fittings and flanges.

PIPE BENDING—The art of Pipe Bending has been developed by us to a high degree. As wrought-steel bends are more elastic than ordinary curved fittings, they are capable of taking up expansion and should be used wherever possible in pipe lines instead of fittings.

PIPE JOINTS—We manufacture solid welded steel flanged joints and reinforced Van Stone joints for high pressure work and ordinary screwed flanges for low pressure and exhaust pipe.

COST OF WELDED WORK—The cost of our welded header and welded flange work, using full weight

pipe good for 200 lbs. working pressure, is no greater than the old method of using extra heavy pipe, which is necessary with screwed flanges on account of decreased strength at threads.

Catalogs, estimates and further particulars concerning all our products furnished on application.



EXAMPLE OF PIPE BENDING

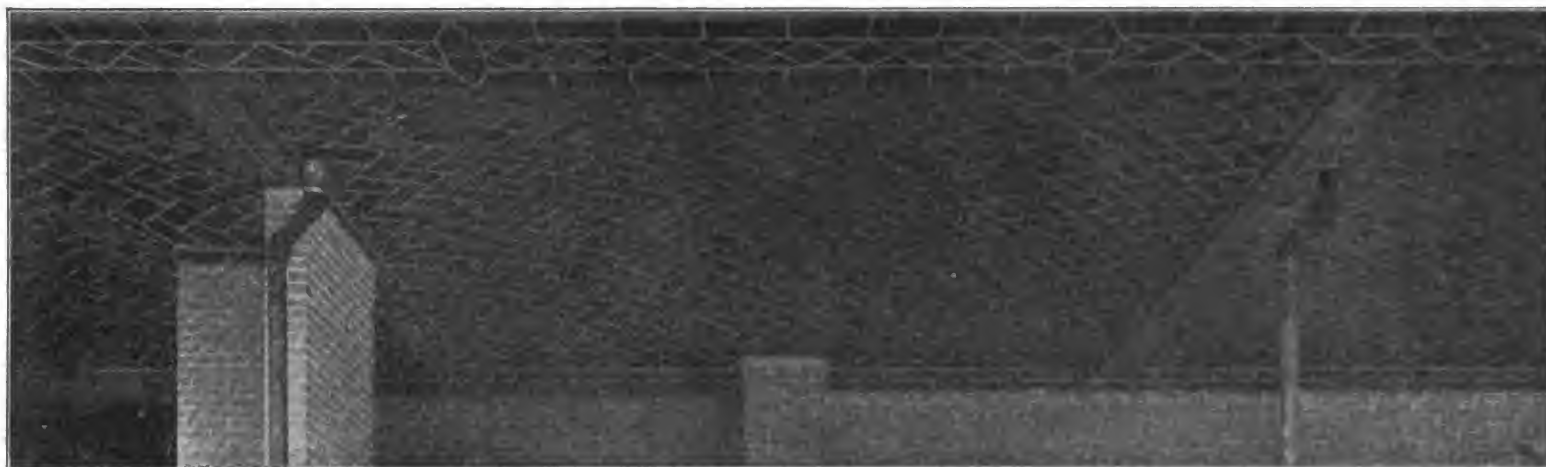
Digitized by Google

The Comerma Company

Incorporated

Arches, Domes and Vaults Built of Cohesive Tiles

4 EAST 42nd STREET
NEW YORK CITY



COMERMA CEILING IN SHEFFIELD FARMS DAIRY, NEW YORK CITY, FRANK A. ROOKE, ARCHITECT

PRODUCTS—CONTRACTORS FOR ARCHES, DOMES, VAULTS, STAIRCASES AND FLOOR CONSTRUCTIONS subject to heavy Loads and covering large Spans. Built using the principle of the Cohesion between flat Tiles for their strength

DESCRIPTION—The Construction consists of Arches formed of several layers of flat tiles laid in cement mortar. In detail it is specially designed to meet the requirements of each individual case.

The soffit or Facing Tiles, where they are to remain exposed to view, are of the finest grade Faience, with the surfaces either plain, ribbed or embossed, and with the finish either high-glazed, mat-glazed, or unglazed as desired. These soffit tiles may be had in various colors or shades and in mottled or metallic effects.

Where the soffit is to receive a plaster or stucco finish the rough backing tiles are used for the face course in place of the Faience tiles.

The constructional or backing tiles are made of hard-burnt terra cotta 1 inch thick, varying in size from 6" x 12" to 24" in length, as best adapted to the requirements of the work. The surfaces of these tiles are ribbed.

ADAPTABILITY—This Type of Construction is especially adapted for Cathedrals, Churches, Capitol Buildings, Court Houses, Banks, Railroad Stations and other public buildings where domes and vaults and large arch soffits are likely to occur.

FACILITIES—We are equipped to furnish and erect this type of construction in the most thorough and expeditious manner at a minimum cost.

CO-OPERATION WITH ARCHITECTS—We are at all times pleased to give information and advice or to place our engineering department at the disposal of architects design-

ing buildings in which this type of arches and vaulting could be employed either for its constructive facilities or decorative effect.

HOW TO SPECIFY—All "Comerma Tile Arch Construction" called for in this specification, shown on the drawings, or both, shall be constructed as follows:

The constructional or backing tiles shall be of the best quality hard-burnt terra cotta, 1 inch thick, and of the proper size for the work. They shall be laid in mortar composed of 1 part Atlas (or equal grade) Portland Cement and 2½ parts of clean, sharp and well-screened sand.

The facing of the soffits, where they are to be exposed to view, shall be high-glazed (or mat-glazed, or unglazed) Faience Tile, of color and finish selected by the architect, and shall be pointed with a raised joint (or a struck joint) ¼" wide. The facing of the soffits, where they are to be covered by the work of other trades, shall be of the rough backing tiles.

The Contractor shall submit to the architect, for approval, drawings fully showing the construction, and on the completion of the work shall furnish a written guarantee that the construction will sustain a load of . . . pounds per superficial foot within 30 days after the erection is complete.

The Contractor for the above work will be required to furnish the architect with satisfactory evidence of his skill and experience in this type of construction.

NOTE—Descriptions in parenthesis are alternatives.

REFERENCES—The following is a partial list of recent installations:

BUILDING	LOCATION	ARCHITECT
Residence	New York City	Alfred Busselle
Sheffield Farms Dairy	New York City	Frank A. Rooke
Trade School	Mount Vernon, N. Y.	Werner & Windolph
St. Thomas Parish House	New York City	Cram, Goodhue & Ferguson
Peterson Memorial Bldg.	Troy, N. Y.	Marcus T. Reynolds
Lester Memorial Home	New Rochelle, N. Y.	Arthur G. C. Fletcher
Kenarden Hall	Northfield, Mass.	Parish & Schroeder

Atlantic Terra Cotta Company

1170 BROADWAY
NEW YORK, N. Y.

Four Plants
TOTTENVILLE, N. Y.
PERTH AMBOY, N. J.
(Two)
ROCKY HILL, N. J.



Southern Branch
ATLANTA TERRA
COTTA COMPANY,
EAST POINT, GA.

NEW YORK CITY'S TERRA COTTA LINE
More than 45% of the visible building material is Atlantic Architectural Terra Cotta.

District Managers

ATLANTA, GA.	W. C. Hall, 817 Forsyth Building.	BOSTON, MASS.	F. E. Coombs, 201 Devonshire St.
PHILADELPHIA, PA.	C. T. Meyers, 1308 Commonwealth Building.	PITTSBURGH, PA.	F. G. Evatt, 705 Fulton Building.
Agents			
BUFFALO, N. Y.	John H. Black Co., 9 Builders Exchange.	MONTREAL, CAN.	David McGill, 83 Bleury St.
NORFOLK, VA.	G. S. Friebus, Carpenter Building.	TORONTO, CAN.	J. R. S. Scott, 65 Victoria St.
WASHINGTON, D. C. W. A. Mills, 729 15th St., N. W.			

REPRESENTED IN EVERY LARGE CITY OF THE UNITED STATES, PORTO RICO AND CANADA

PRODUCTS—ARCHITECTURAL TERRA COTTA; FAIENCE; GARDEN POTTERY; of exceptionally high Grade

Architectural Terra Cotta: Lustrous glazed, matt glazed, and ordinary surface in any one of many colors

Faience: Polychromatic combinations in great variety of soft and bright colors.

Garden Pottery: Garden vases, jars, sundial pedestals, etc., in many distinctive colors

APPLICATION—Atlantic Terra Cotta is used for exterior and interior construction and decoration. It possesses every essential quality of a practical structural material, and possibilities for modeling and color treatment that are unique. It may be used exclusively or in connection with any other building material, matching or contrasting in surface texture and color.

QUALITIES—PRACTICAL: Atlantic Terra Cotta is absolutely unimpaired by fire or weather; it stands any necessary compression when properly constructed, and is permanently durable.

DECORATIVE: It is easily modeled in architectural design or figure work, and the possibilities for color treatment are practically unlimited.

MECHANICAL: Accurate alignment and close-fitting joints, obtained by machine grinding, are prominent characteristics of Atlantic Terra Cotta.

MODELING—The Atlantic Modeling Departments are experienced in the various styles of architectural ornament and fully able to execute figure work. Atlantic modeling has character and strength, is free from constraint and thoroughly consistent with the desired precedent. The models in a finished state are subject to the Architect's revision.

COLORS—STANDARD: Comprises the grays, reds, browns, buffs and granite colors, with ordinary finish (similar to smooth limestone).

GLAZE: Lustrous or matt surface; comprises white and the various shades of cream. The lustrous finish is similar to polished marble, and the matt to smooth but unpolished marble.

FAIENCE OR POLYCHROME: Comprises all the brighter colors—greens, yellows, blues, etc. Faience colors are made in several textures, may be used in any desired combination, and are interchangeable with the other two classes. Atlantic bright gold is a unique Terra Cotta color, and makes a permanent gold commercially possible.

CONSTRUCTION—The Atlantic Company makes complete construction drawings, in strict accordance with the Architect's plans, showing in detail what experience has proved to be the best method of bonding, anchoring and jointing. These drawings are subject to the Architect's approval, and from the approved drawings iron schedules are drawn up. (If advisable, the Atlantic Company supplies the iron.) The builder is supplied with setting drawings to facilitate construction.

Before shipment every Atlantic contract is carefully fitted and inspected, with the result that the material is ready for placement at the building as rapidly as it can be handled.

On work where the construction is predominantly of Terra Cotta the builder may, and generally does, employ an Atlantic Supervising Fitter, thoroughly experienced in Terra Cotta construction. Atlantic Fitters are temporarily located wherever important work is going on, and under the direction of the Building Superintendent they not only attend to their own work but supervise the work of the other masons and setters.

DELIVERY—Shipments are made *on time* according to prearranged schedule dates. The efficiency of Atlantic Service greatly discounts the possibility of delayed deliveries.

FACILITIES—The varying size of the four Atlantic Factories in the North insures the same high quality and excellent service on large and small contracts. For convenience in handling the Southern trade the Atlantic Company has established the **Atlanta Terra Cotta Company**, with a thoroughly equipped plant, at East Point, Georgia, six miles from Atlanta.

INFORMATION—A card to the Atlantic Terra Cotta Company, 1170 Broadway, New York, will bring illustrated booklets and other information.

COST—Every piece of Atlantic Terra Cotta is made for the building in which it is to be used, and is designed to occupy a certain place in that building. Prices are based entirely upon estimates made from the Architect's plans and specifications. Plans forwarded for estimate to main or any branch office receive immediate attention. In general the price of Atlantic Terra Cotta will range from twenty to fifty per cent lower than other high-class structural materials, and in the case of a design that calls for extensive or intricate modeling the saving will be particularly great.



MAURY HIGH SCHOOL, NORFOLK, VA.

Neff & Thompson, Architects. East & Hobbs, Builders. Columns and all decorative features are of ivory matt Atlantic Terra Cotta, enlivened with blue, green and orange.

**Atlantic Garden Pottery
Catalog on Request**



HEIGHT—26 IN.



HEIGHT—30 IN.



HOLY TRINITY CHURCH, NEW YORK

Jos. H. McGuire, Architect. J. J. White, Builder. Columns and major part of interior of Atlantic Polychrome Terra Cotta.



METROPOLITAN THEATRE, SEATTLE, WASH.

Howells & Stokes, Architects. Stone & Webster, Builders. Windows, balcony, entrances, etc., of matt cream Atlantic Terra Cotta.



WOOLWORTH BUILDING, NEW YORK.

Designed by Cass Gilbert and now being erected by the Thompson-Starrett Co. Fifty-two stories, on four elevations, of Atlantic matt cream Terra Cotta. Ornament accentuated with polychrome.

CLASSIFICATION PAGE OF

SECTION 9

Stone and Marble for Exterior and Interior Work

(Artificial Products see Section 10)

Section Synopsis

Granite, Porphyry, Marble, Alabaster, Onyx, Limestone, Bluestone, Sandstone; Stone-working Machinery, Tools; Contractors for Exterior Building Work, Interiors, Fixtures; Mantels; Altars,

Fonts; Screens, Pedestals, etc.; Monuments, Mausoleums; Bridge Abutments, etc.; Paving Blocks; Plumbers' Marble Work; Switchboards, Panelboards

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX REGULAR CLASSIFICATION		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
				1 to 8	9 to 16	17 to 24	25 to 32	33 to 40			1 to 8	9 to 16	17 to 24	25 to 32	33 to 40
1	Alabaster, interior work														
2	Bluestone, sills, watertable, steps, flagging, etc.														
3	Contractors, for work and setting, buildings, engineering work														
4	Crushed material, sundry purposes														
5	Granite, structural, monumental														
6	Granite paving blocks														
7	Imported marble, all varieties and work														
8	Imported stone, all varieties and work														
9	Limestone, exterior, interior														
10	Marble, structural and monumental, exterior and interior work														
11	Mausoleum and vault work, cemetery														
12	Monuments, cemetery, statue pedestals														
13	Native marble, all varieties and work														
14	Onyx, interior work														
15	Plumbers' marble work, slabs, partitions, etc.														
16	Porphyry, monumental, decorative, crushed for concrete facing														
17	Sandstone, exterior, interior														
18	Special stone-working tools, saws, surfacers, etc.														
19	Switchboards, panelboards, etc.														
20	Treated natural marble														
SPECIAL CLASSIFICATION															
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.															
33	Marble floor tiles (S. 24)														
34	Marble granito, for terrazzo floors (S. 24)														
35	Marble squares, for marble mosaic floors (S. 24)														
36	Marble objects of art (S. 43B & D)														
TRADE NAMES AND BRANDS															
"Ariston," treated natural marble, Catalog 3															
"Hardwick-White," (Bethel) granite															
"Woodbury-Bushaw," granite															
"Iris," porphyry, Catalog 2															
		3	Ariston Marble Co. New York, N. Y.		10 12 15	19 20		33 36							
		2	Bonnell, J o h n Harper New York, N. Y.	4	12 16										
		1	Woodbury Granite Co. Hardwick, Vt	4 5 6	11 12										

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		1 to 8	9 to 16	17 to 24	25 to 32	33 to 40
Alabama Marble Co..... Gantt Quarry, Ala.		10				Erkine Studios..... New York, N. Y.		10				Meadow Marble Co..... Meadow, Tenn.		10			
						Evans Marble Co..... Baltimore, Md.	5 6 7	10 11 12 15	17		33 34 35	Newark Blue Stone Co..... Newark, N. J.	2				
Appalachian Marble Co..... Knoxville, Tenn.		10				Fisher Co., Robert C..... New York, N. Y.	5 6 7 8	10			35	North Carolina Corporation. Mt. Airy, N. C.	5				
Barney Marble Co..... Swanton, Vt.		10			33	Flint Granite Co..... New York, N. Y.		11 12				Pedra Onyx Co..... San Diego, Cal.		14			
Bedford Steam Stone Works Bedford, Ind.		9				Fort Recovery Tile Co..... Port Recovery, Ohio	3					Penna. Marble & Granite Co. Philadelphia, Pa.	5	10			
Blake & Co., Chas. G..... Chicago, Ill.		11 12				Francini, C..... New York, N. Y.		10				Peoria Stone & Marble Works Peoria, Ill.	1 7 8	10 14 15			33 34 35
Blue Ridge Marble Co..... Nelson, Ga.		10										Pickel Marble & Granite Co. St. Louis, Mo.	5 6	10 11 12 14 15			33
Bradley & Son, Wm..... Long Island City, N. Y.		10				Granite Railway Co..... Quincy, Mass.	5 6					Picton Island Red Granite Co. New York, N. Y.	5	10			
Buess, Wm..... New York, N. Y.	7	10 14 15			33 35	Gray Eagle Marble Co..... Knoxville, Tenn.		10				Rockport Granite Co..... Rockport, Mass.	5 6				
Christa Marble Co..... Detroit, Mich.	7 8	10 11 14 15			33	Guilford & Waltersville Gran- ite Co. Baltimore, Md.	5 6					Shipway & Bros., John H.. New York, N. Y.	7	9 15			33 34 35
Consolidated Stone Co..... Chicago, Ill.		9				Hilgartner Marble Co..... Baltimore, Md.	4 7 8	10 11 12 14 15			33 34 35	Sickels Marble Co., Geo. B.. Tate, Ga.		10			
Davis Marble Co..... New York, N. Y.		10			33 35	Howard, Francis..... New York, N. Y.		10				Standard Marble Works.... Cincinnati, Ohio	7 8	10 11 14 15			33 34 35
Dempster, H. T..... New York, N. Y.		10				Interior Marble & Tile Co.. Pittsburgh, Pa.		10				Taber & Co..... New York, N. Y.	7	10			
Des Moines Marble & Mantel Co. Des Moines, Iowa	4 5	10 12				Kennesaw Marble Co..... Marietta, Ga.	7	10				Victoria Marble Co..... Knoxville, Tenn.		10			
						Kingwood Quarries Co..... New York, N. Y.			17			Webb Granite & Construc- tion Co. Worcester, Mass.	5				
						Leland Co..... New York, N. Y.	5	11				Weiblen Marble & Granite Co., A., Inc. New Orleans, La.	5 6 7	10			
Dover White Marble Co..... New York, N. Y.	5 6 7	10 11 12 14 15			33 34 35	McGratty & Sons..... Brooklyn, N. Y.	7 8	9 10 14			33 35	Western Marble Co..... Marble City, Okla.		10			

Woodbury Granite Company

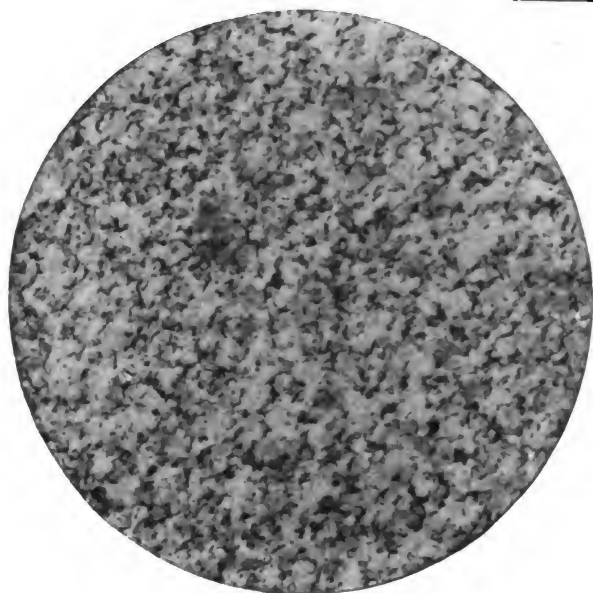
HARDWICK, VERMONT

MR. GEORGE H. BICKFORD, General Manager

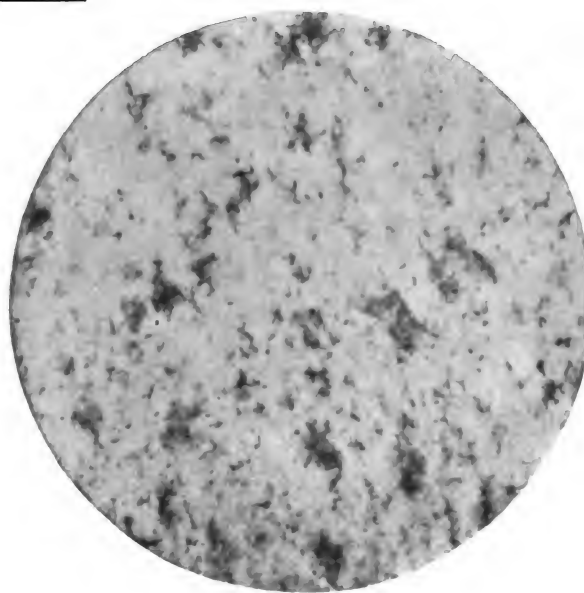
Selling Offices

814 MONADNOCK BLOCK, CHICAGO, ILL.

1 MADISON AVENUE, NEW YORK CITY



WOODBURY GRAY GRANITE
(REPRODUCTION OF A POLISHED DISC)



HARDWICK WHITE GRANITE
(REPRODUCTION OF A POLISHED DISC)

PRODUCTS—WOODBURY GRAY, A FINE-GRAINED, LIGHT GRAY BUILDING GRANITE. WOODBURY BASHAW, A FINE-GRAINED DARK GRAY MONUMENTAL GRANITE. HARDWICK WHITE (BETHEL), THE WHITEST GRANITE QUARRIED

USES—Granite for building and monumental purposes, bridge and construction work, paving blocks, curbing, and crushed granite, screened to size, for road work, railroad ballast and concrete.

FACILITIES—Paid capital, \$1,000,000; 12-derrick quarry at Woodbury, Vt.; 6-derrick quarry at Bethel, Vt.; cutting shops at Hardwick, Vt., employing 600 men; cutting shops at Bethel, Vt., employing 400 men; electric power throughout, from our own waterpower plants. Superb equipment, planned for speed.

WOODBURY GRAY

Pennsylvania State Capitol
Kentucky State Capitol (base)
Iowa State Capitol (steps and platforms)
Idaho State Capitol (entrance)
State Historical Bldg., Lincoln, Neb.
City Hall, Chicago, Ill.
Cook County Court House, Chicago, Ill.
Syracuse University Library and Gymnasium
Post Office, Providence, R. I.
Post Office, Des Moines, Iowa
Post Office, Grand Rapids, Mich.
Commonwealth Trust Co., Pittsburg, Pa.
Mahoning County Court House, Youngstown, Ohio
National Hotel, Rochester, N. Y.
Karpen Bldg., Chicago, Ill.
La Salle St. Station, Chicago, Ill.
City Hall, Des Moines, Iowa
Bankers' Trust Co. (tower), New York City
Northern Ave. Bridge, Boston, Mass.
Edison Waterside Power Station, New York City

"A.F.C." SYSTEMS

SETTING—Where desired, we quote on granite work set in place in the building. We have our own setting gangs and equipment, and on contracts let in this way we can guarantee speed.

DELIVERIES—We are the originators of rapid delivery as applied to granite work. Our organization produces work on time. Blocks of any size to the limit of transportation. Capacity of our plants, 2,500 cu. ft. of finished work per eight-hour day.

DIRECTORY—Samples and analyses of our stones furnished on request. An inspection of the following buildings will show the granites in use:

HARDWICK WHITE

Wisconsin State Capitol
Title Guarantee & Trust Co., 176 Broadway, New York City
Importers' & Traders' National Bank (base), 247 Broadway, New York City
American Bank Note Co., Broad and Beaver Sts., New York City
Emigrant Industrial Savings Bank, New York City
Harry Payne Whitney residence, 79th St. and Fifth Ave., New York
Union Station, Washington, D. C.
Essex County Court House (base), Newark, N. J.
Franklin Savings Bank, Greenfield, Mass.
J. B. Duke residence, 5th Ave. and 78th St., New York City
Bedford residence, Green Farms, Conn.
Boston Stock Exchange (base)
Old Colony Trust Co., Boston, Mass.
Church of the Immaculate Conception, Minneapolis, Minn.
State Library, Hartford, Conn.

John Harper Bonnell

Iris Porphyry
501 FIFTH AVENUE
NEW YORK, N. Y.

PRODUCT—IRIS PORPHYRY (Jersey Pink Granite)

IRIS PORPHYRY—This is one of the most beautiful of decorative stones produced. It is being quarried at Pompton Junction, N. J., situated about thirty miles from New York, and the supply is inexhaustible. A special switch facilitates the fulfilling of all orders promptly and regularly.

The Webb Granite Construction Company of Worcester, Mass., has sawed a considerable amount of this stone into slabs. Samples of such will be furnished to architects upon request and will convince them of the claims put forward with regard to the qualities of this material.

Crushing plant already installed. Any orders for aggregate promptly executed.

SIZES—Large sizes guaranteed.

COLOR AND TEXTURE—The formation is that of a true porphyry. It presents a combination of colors differing widely from any other granite or marble and to be found nowhere except in onyx, but it is without the coldness and glassy appearance of that stone.

The beautiful mixture of pink, green, black and crystalline white produce a "pattern" as in many decorative marbles.

These colors are not evenly distributed in grains of the same size, as in most granite, but are variegated in patches. The pink is a genuine pink, a warm tint between flesh and salmon color.

EXTRACTS FROM LETTERS ON FILE

"Referring to my call upon you with our Mr. Rouse, and my examination of Granite or Iris Porphyry, beg to advise that I was very much pleased with this material, and particularly what I should consider its splendid adaptability for use as an aggregate with Portland Cement and particularly with our Atlas White Portland Cement. There is no doubt in my mind that the material will make splendid aggregate, and its variety of color and its hardness will create a demand for decorative work in concrete that should be very large." (Edward D. Boyer, Cement Expert, Atlas Portland Cement Company.)

"It is of such beautiful coloring and yet rich and soft in tone that it can be used in many places where heretofore marble has been the only available material." (Hill & Stout, Architects.)

"Once the stone is on the market it will be its own advertisement." (Report from J. Volney Lewis, State Geologist of N. J.)

"Samples of granite are very beautiful and supply a long felt want." (Offices of McKim, Mead & White.)

"Is a wonderfully unique and beautiful stone. Any architect or artist would be only too glad to use such material." (J. L. Neal, Architect, Pittsburgh.)

"I don't know of any stone its equal in beauty of color or texture." (Parkhurst Brothers, Decorators.)

The green is of a very translucent tone between moss and sea green. There is also an opalescent white from the quartz, and a brilliant black from the biotite.

POLISHED WORK—This stone takes a high polish, setting off the delicate coloring to its highest effect, furnishing a finished material of the greatest value for interior and exterior decorative work, such as columns, floor borders, wainscoting, etc.

MONUMENT PEDESTALS—Iris Porphyry is eminently adapted for pedestals of monumental work, the color combination with bronzes and the background of trees, etc., being perfect.

CONCRETE FACING—We are putting this material on the market in crushed form for concrete facing. From successful experiments made we anticipate a large use of Iris Porphyry for this purpose.

WORK EXECUTED—In the following work Iris Porphyry has been used with the greatest success:

	Architects
McKinley Monument, Columbus, Ohio	Lord & Hewlett, New York
God Pan, Columbia University	McKim, Mead & White, New York
J. D. Rockefeller's Gardens	W. W. Bosworth, New York
Wetzel Building	Hill & Stout, New York
20-22-24 West 37th Street	G. & E. Blum, New York
1557-1563 Broadway	Stuckert & Sloan, Philadelphia

"It gives me great pleasure to write you a few lines giving my estimate of the Pompton Granite, though the material speaks so well for itself that it is hardly necessary, it seems to me, for you to have testimonials. I know of no granite that has the life and interest that there is in this material, etc." (E. D. Litchfield, of Tracy, Swartwout & Litchfield.)

"I take pleasure in speaking every time the subject comes up about that pink granite you are handling from the quarry at Pompton Junction. I think the combination of its colors with a bronze of good size is the most harmonious of any granite in the United States in use to-day." (H. A. MacNeil, President, National Sculptors' Society.)

"I think I may say that it is the most beautiful granite I have ever seen for monumental purposes, especially where a monument has any sort of landscape setting. Its richness and variety of tone make it highly desirable, the green markings in particular make it harmonize with the grass and shrubs." (H. Van Buren Magonigle, who is famous for monumental work, i. e., Firemen's, Fulton Memorial, Maine, etc.)

"I fully agree with Mr. Baker (of McKim, Mead & White) as to the beauty and desirability of the granite and that there is no question as to its capacity and convenience." (John M. Carrère, of Carrère & Hastings.)

"Your Pompton Pink Granite is, in my opinion, the most decorative of all the granites on the market, and it is a pleasure to recommend it in the highest terms. The use we made of it in the Rockefeller gardens was very gratifying to everyone concerned, and it continues to excite great admiration." (W. W. Bosworth, Architect.)

Ariston Marble Company

1133 BROADWAY
NEW YORK, N. Y.

PRODUCTS—ARISTON MARBLE FLOOR AND CEILING TILE, WAINSCOTING; BALUSTRADES AND RAILINGS for Banks; CHURCH ALTARS AND FONTS; PEDESTALS, LAMP BASES, SCREENS, CLOCK CASES, FIREPLACE MANTELS, VASES, BAS-RELIEFS, BRIC-A-BRAC AND OBJECTS OF ART; ELECTRICAL AND PLUMBING GOODS, and other Articles requiring a high-grade Material.

DESCRIPTION—Ariston Marble is a treated natural marble. While not a Calcium Carbonate, it is a solid stone and not a composite. It is a sulphate rock found very generally throughout the United States in large quantities, usually in pure white, but occasionally with gray or mottled markings. It can be bought at anywhere from one-tenth to one-twentieth of the cost of ordinary marble. It can be cut, turned and carved more easily than soapstone; it is cut, and not molded or pressed.

The process of treatment used by the Ariston Marble Company is one that has long been sought. The stone is first thoroughly hardened until it is as strong and permanent as a boulder. In this state it may be used in its natural tones of white or gray for innumerable purposes. In addition, however, this Company has discovered a method by which this marble can be colored by the use of mineral colors and so that the grain of the stone is thoroughly permeated. The result is that any color effect or combination desired may thus be produced in the solid stone. *This result is uniform and certain.*

COLOR POSSIBILITIES—

Ariston Marble can, therefore, be produced not only in pure white and in the natural veining of carbonate marbles, but also in a variety of color treatment that makes it possible for Architects and Interior Decorators to secure effects in stone similar to those hitherto obtained only in textile fabrics and wood.

ADAPTABILITY—Ariston Marble is especially adapted for **Flooring** in tiles and slabs and with border effects. For Marble

"A.B.C." SYSTEMS

Interior Work we can supply our material not only in Sienna, Irish Verde, Numidian, Italian and French Colors, but in **new effects** resembling Malachite and Lapis Lazuli, for high-class work.

Where decorative beauty, together with substantial quality and a permanent surface, is required, Ariston Marble is of the utmost value and gives certain advantages found in no other material. It is especially useful



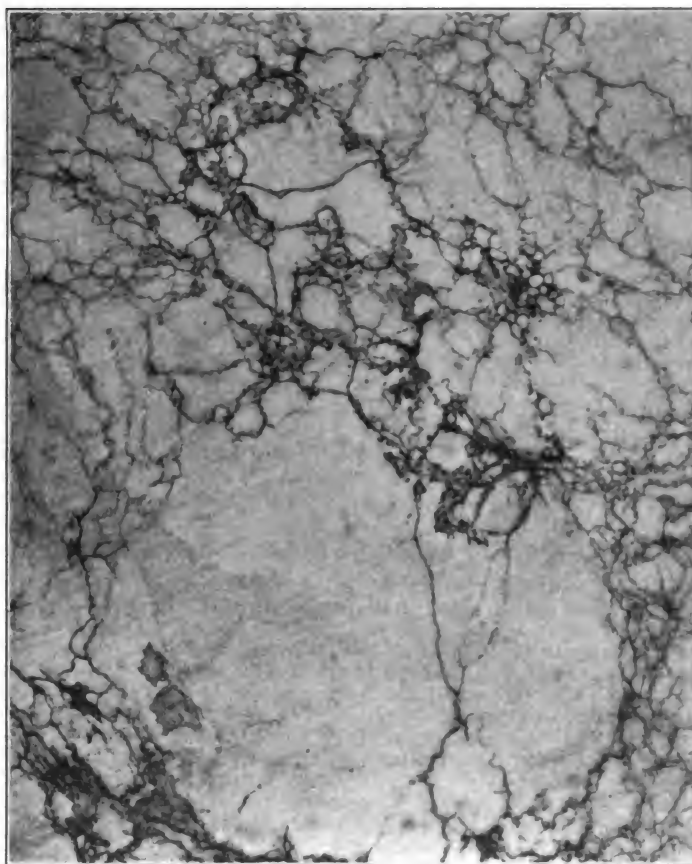
TRADE MARK

in interior work where certain color schemes have to be carried out; but it should be remembered that no coloring is necessary where gray or the usual veined effects are sought. The stone we use is veined precisely like carbonate marble.

Ariston Marble is also adapted for art objects of every description, as enumerated in the **Products** paragraph.

For Plumbing and Electrical purposes it is especially desirable because of its beautiful appearance and sanitary nature.

TESTS — Three consecutive tests were made at Columbia University Testing Laboratory and certified to by Dr. Ira Woolson and Professor Macgregor. Ariston Marble showed a crushing resistance of 8,010; 11,740; and 12,874 lbs. per square inch. The hardness test certified to by Professor Moses of Columbia University is three plus; therefore this marble can compete with the highest grade of native and imported stone.



SAMPLE OF VEINED WHITE ARISTON MARBLE

SPECIAL ECONOMIES—Ariston Marble is cut from rock which costs less than one-half of the cheapest marble. It costs from two-thirds to three-fourths less to work than ordinary marble.

ESTIMATES AND SAMPLES—We shall be pleased to furnish estimates and samples of Ariston Marble. Correspondence from Architects and Contractors is cordially solicited.

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	
American Art Marble Co.... Philadelphia, Pa.		9										Kapailo Mfg. Co..... New York, N. Y.		9 10			
						California Scagliola Co.... San Francisco, Cal.		9 10									
American Art Stone Co.... Cleveland, Ohio	1 2											Marblecrete Products Co.... Akron, Ohio.		9 10			
						Cassini Mosaic & Tile Co.... Cincinnati, Ohio		9 10				Noncenti Co., Michael, Inc. New York, N. Y.		9 10			
American Monolith Co..... Milwaukee, Wis.		10															
						Cousins Co., H. A..... New York, N. Y.		9 10				Pompeian Garden Furniture Co. New York, N. Y.	1	9			
American Stone Renovating & Stucco Co. New York, N. Y.	3											Pompeian Stone Co..... New York, N. Y.	1	9			
						Eastman & Johnson Mfg. Co. Dallas, Tex.		9 10									
Artificial Marble Works... New York, N. Y.		9										Standard Marble Works... Cincinnati, Ohio		9 10			
						Emerson & Norris Co..... Brighton, Mass.	2										
						General Kompolite Co. New York, N. Y.	10										
Art Marble Co..... Chicago, Ill.		9 10				Henry Marble Co..... Chicago, Ill.		9 10				Tesco Products Co..... Milwaukee, Wis.		9 10			

"A.B.C." SYSTEMS

CLASSIFICATION PAGE OF SECTION 11

Reinforced Concrete Systems and Work

(General Metallic Fireproofing see Section 12)

Section Synopsis

Materials and Methods; Wire Mesh Fabric; Sheet-Metal Fabric; Expanded Metal; Bars, Rods, Chain Girder Frames; Systems for floors, columns, partitions, walls, roofs; General

Building Construction; Engineering Works, such as Retaining Walls, Dams, Sewers, Culverts, Bridges, Stand Pipes, Tall Chimneys, Water Tanks; Reinforced Concrete Piles, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX		TRADE NAMES AND BRANDS		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
REGULAR CLASSIFICATION						1 to 8	9 to 16	17 to 24	25 to 32	33 to 60
1	Building construction, every class	"Cellular Metal," sheet metal fabric reinforcement	Cat. 5	6	Electric Welding Co. Pittsburgh, Pa.	3	10	17	37	
2	Engineering works, road bridges, retaining wall, culverts, sewers, tall chimneys, etc.	"Keyridge," sheet metal fabric reinforcement				5	13	18		45
3	Reinforced concrete piles	"Cummings" system of concrete reinforcement	Cat. 6			7	14	19		
4	Steel reinforcements:—	"Universal," rod benders and straighteners, and steel forms				8	15	16		
5	Chain link	"Ferroinclave," sheet metal fabric reinforcement	Cat. 1							
6	Column spirals and sundries	"M./B.," reinforcing bars, girder frames, etc.				Cat. 3				
7	Expanded-metal	"Securo," supporting spacer								
8	Girder frames, spacer chairs, etc.									
9	Rods, bars, plain, shaped, patent									
10	Sheet-steel fabric, special shapes									
11	Wire-mesh fabric									
12	Sundries:—									
13	Pipes, water, drainage									
14	Tanks, stand pipes, silos									
15	Systems of construction:—									
16	Columns and posts									
17	Floors and roofs									
18	Stairs									
19	Walls, partitions									
20	Tools and erection equipment:—									
21	Forges, special, clamps, etc.									
22	Rod straighteners and benders									
23	Steel forms									
SPECIAL CLASSIFICATION				Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.						1 to 8	9 to 16	17 to 24	25 to 32	33 to 60
33	Engineers, reinforced concrete (S. 2 A)	1	Brown Hoisting Machinery Co. Cleveland, Ohio	1	9	36				37
34	Fencing, guards, sundries:—	2		2	12					
35	Expanded-metal (S. 15 D)				14				39	
36	Wire-mesh (S. 15 D)				15					40
37	Hoisting machinery (S. 3)				16				42	
38	Plastering lath:—									44
39	Corner beads (S. 12 A)								46	
40	Expanded metal (S. 12 A)									
41	Punched sheet-metal lath (S. 12 A)									
42	Wire-mesh fabric (S. 12 A)									
43	Protective corner bars, for columns, curbs (S. 12 B)									
44	Reinforced concrete machinery (S. 3)									
45	Special design rolled furring, studing, etc. (S. 12 B)									
46	Sheet-metal lumber (S. 12 B)									
47	Steel window sash and doors (S. 16 D)									
48	Wall ties and plugs (S. 18)									
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Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	
American Steel & Wire Co. of N. J. Chicago, Ill.		10 14			40	Detroit Wire & Iron Works Detroit, Mich.		10			40	Myers Mfg. Co., Fred J. Hamilton, Ohio		10 13			
Armored Concrete Construc- tion Co. Baltimore, Md.	3 5	13 14 16				Dow Wire & Iron Works.... Louisville, Ky.		13 14			34	Oneida Community, Ltd.... Oneida, N. Y.	4				
Baltimore Schub Concrete Construction Co. Baltimore, Md.	1					Duplex Metals Co. Chester, Pa.	8					Oregonia Bridge Co. Lebanon, Ohio	2 6 8				
Berger Mfg. Co. Canton, Ohio	6	9 14 16			34 37 38 39 40 41 44	Expanded Metal Engineer- ing Co. New York, N. Y.	6 8	9 14 16			34 38	Page Woven Wire Fence Co. Adrian, Mich.		10			
Bostwick Steel Lath Co. Niles, Ohio	6	10			34 35 37 38 39 40	Ferro Concrete Construction Co. Cincinnati, Ohio	1 2					Pardee Works, C. Perth Amboy, N. J.	8				
Bromell Brush & Wire Goods Co. Cincinnati, Ohio		10				Fort Wayne Rolling Mill Co. Fort Wayne, Ind.	8					Pittsburgh Steel Products Co. Pittsburgh, Pa.	2 3				
Buffalo Expanded Metal Co. Buffalo, N. Y.	6 7	13 14 16			34 38	Franklin Steel Co. Franklin, Pa.	8					Priddle, Arthur. San Francisco, Cal.		9			
Buffalo Steel Co. Tonawanda, N. Y.	3 5 7 8				35	Gabriel Concrete Reinforce- ment Co. Detroit, Mich.	8	13				Republic Iron & Steel Co. ... Pittsburgh, Pa.	8				
Buffalo Wire Works Co. Buffalo, N. Y.		10			35 40	General Engineering & Con- struction Co. Rockford, Ill.	1 2					Rodgers Co. Chicago, Ill.	1 2	13 14 16			
Cargill Mfg. Co. Columbus, Ohio		10				General Fireproofing Co. Youngstown, Ohio	6	9 14 16			34 37 38 39	Roebling Construction Co. ... New York, N. Y.		10 14 16			
Chicago Building Specialty Co. Chicago, Ill.	6 8				37 38 41	Goff, Horner & Co., Ltd. Pittsburgh, Pa.	6 8	9 11 12			34 38 39	Schratwieser Fireproof Con- struction Co. Brooklyn, N. Y.		13 14			
Clinton Wire Cloth Co. Clinton, Mass.		10			35 40	Howard & Morse. New York, N. Y.		10			40	Slatington Rolling Mills. Slatington, Pa.		8			
Columbian Concrete Bar Co. Pittsburgh, Pa.	7 8					Inland Steel Co. Chicago, Ill.	8					Smith Wire & Iron Works. ... Chicago, Ill.	4 6 7 8	9			
Concrete Steel Co. New York, N. Y.	5 7 8					Jansen & Zoeller. Pekin, Ill.	1 2					Snow Wire Works Co. Rochester, N. Y.		10			
Concrete-Steel Engineering Co. New York, N. Y.	2 3 8	12				Jones & Laughlin. New York, N. Y.	8					Sweets Steel Co. Williamsport, Pa.	8				
Consolidated Expanded Metal Cos., Inc. Pittsburgh, Pa.	6					Kansas City Bolt & Nut Co. Kansas City, Mo.	8					Standard Concrete-Steel Co. New York, N. Y.	1	14			
Corrugated Bar Co. Buffalo, N. Y.	5 6 7 8	13 14 16			34 38	Kansas City Wire & Iron Works Kansas City, Mo.		10				Sykes Metal Lath & Roofing Co. Niles, Ohio	6				
Crucible Steel Co. of America Pittsburgh, Pa.	8					Knoxville Iron Co. Knoxville, Tenn.	3 8					Syracuse Wire Works. Syracuse, N. Y.		10			
Darby & Sons, Edward, Inc. Philadelphia, Pa.	6	10			34 35 37 38 40	Lockhart Iron & Steel Co. ... Pittsburgh, Pa.	8					Trussed Concrete Steel Co. ... Detroit, Mich.	7 8				
						Ludlow-Saylor Wire Co. St. Louis, Mo.		10			35 40	White Fireproof Construc- tion Co. New York, N. Y.		13 14 16			
						Merritt & Co. Camden, N. J.	6 8	9				Wright Wire Co. Worcester, Mass.		10			
						Michigan Wire Cloth Co. Detroit, Mich.		10			35 40	Youngstown Iron & Steel Co. Youngstown, Ohio	6	9			
						Megoloth Steel Co., Inc. Washington, D. C.	5 6 7 8	9 10									

The Brown Hoisting Machinery Co.

Founded in 1880

Main Office and Works
CLEVELAND, OHIO

Branch Offices

50 Church Street, NEW YORK
Frick Building, PITTSBURG

Commercial Nat. Bank Bldg., CHICAGO
Monadnock Bldg., SAN FRANCISCO

Manufacturers of All Kinds of Hoisting Machinery and of



A COMBINED REINFORCEMENT AND CENTERING for Concrete Roofs, Floors, Partitions, Stairs, Bins, Highway Bridges, Culverts, Walls, Tanks, Silos, etc.

DESCRIPTION—Ferroinclave is a box-annealed sheet steel fabric with dovetail corrugations, $\frac{1}{2}$ inch in depth or height, which are inversely tapered, thus permitting the large ends of the corrugations of one sheet to fit or "shingle" over and into the small ends of the corrugations of another sheet. This forms a tight joint and makes one continuous sheet. Sheets for ridges or valleys of roofs are made with non-tapering corrugations.

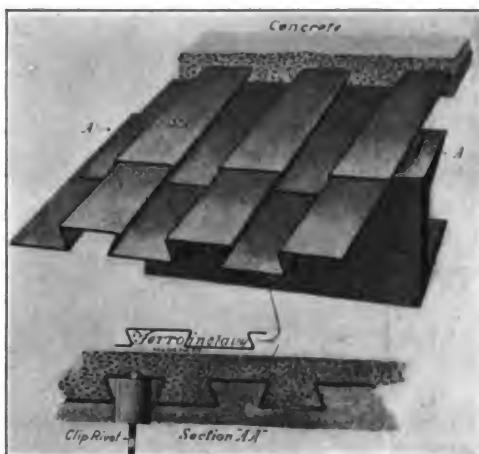
DETAILS FOR ROOFING—Ferroinclave is laid in much the same manner as ordinary corrugated iron roofing. The purlins—l beams, channels or Z bars—may be spaced any distance up to 9 feet 9 inches. The standard size Ferroinclave sheets are 10 feet long, and purlins should be so spaced that the lap (usually 3 inches, or more) of the two sheets comes on one of them. A spacing of 4 feet $10\frac{1}{2}$ inches is most economical, as it allows the use of sheets 10 feet long and requires a minimum of concrete and erecting labor.

The Ferroinclave sheets should be laid on hardwood strips, $\frac{3}{4}$ inch square, placed along the tops of the purlins, thereby preventing corrosion. As the sheets are laid, they should be secured to the purlin, at intervals of 10 inches, with clips furnished with the sheets. The side laps are fastened with our special crossties, spaced about 2 feet apart.

MORTAR MIXTURE—When the Ferroinclave is secured in place, the upper side should be coated with a mixture of one part Portland cement to two or three parts of sand, or one part Portland cement two parts sand and four parts of stone. The coating should be $\frac{1}{2}$ inch in thickness above tops of corrugations when purlin spacing does not exceed 5 feet. Tables of Safe Loads will be furnished on application.

After cement on upper side has set, the under side should be coated with a mortar composed of one part Portland cement to two or three parts sand, with a small amount of hair. Mortar to be $\frac{3}{4}$ inch thick, and applied in three consecutive coats, before the preceding one has time to dry or set. A waterproof covering should be used on top of roof. These Ferroinclave sheets can be bent and shaped into any form and used for cornices, moldings, ridges, etc.

WEIGHT AND COST—Weight of a complete roof (without waterproof covering), $1\frac{3}{8}$ inches thick, is about 16 pounds per square foot. This kind of roof (with purlins not more than



5 feet apart) will support a uniform load of 300 lbs. per square foot after ten days, and costs \$15 to \$17 per 100 square feet, including freight, all labor and material.

FOR SIDINGS AND PARTITIONS—Construction is practically the same as that for roofs.

FOR STAIRWAYS—Sheets are bent so that tread and riser are formed by one sheet. They are mounted on structural-steel or reinforced-concrete stringers. No forms necessary.

DETAILS FOR FLOORING AND HIGHWAY BRIDGES—Same construction as roofing, or sheets may be curved between floor

beams, making a segmental arch floor. Mortar of 1 part Portland cement to 2 or 3 parts sand should be spread over the sheets to about $\frac{1}{2}$ inch above corrugations. Then, Portland cement concrete should be tamped on top to about 3 inches above the crown of the Ferroinclave, thickness depending on span and load. The underside, when coated as in roofing, presents a smooth white appearance and serves as a ceiling.

FOR WATER TANKS, SILOS, BINS, CULVERTS—Sheets are bent according to curvature required, and applied as in roofing.

DETAILS OF SIZES—Sheets are made in any lengths up to 10 feet, and length is determined by spacing of the purlins. Width, $20\frac{1}{2}$ inches. Center to center of side laps, 20 inches. We keep in stock for immediate shipments No. 26 gauge sheets in 10-ft. lengths, and No. 24 U. S. gauge sheets in even and $\frac{1}{4}$ -foot lengths, from 5 to 10 feet. Other sizes and weights are formed to order and shipped promptly.

ADVANTAGES—1. Lightest reinforced concrete construction; 2. Strongest for a given thickness and span; 3. Erected without forms; 4. Sheets are waterproof, and building can be used before concrete is applied; 5. Sheets are laid entirely from upper side; 6. Sheets easily handled; 7. Under side is smooth and white, and serves as a ceiling; 8. On request and for large contracts we will execute the work complete and guarantee same.

TABLE OF DEPLECTIONS

Sheets with Concentrated Load at Middle and Without Cement or Plaster Covering—4 feet Span

WEIGHT OF FERROINCLAVE (NOT INCLUDING LAPS), AND CROSS SECTIONAL AREAS

28 Gauge	.94 lbs. per sq. ft.	.274 sq. in. per ft. of width
26 Gauge	1.13 lbs. per sq. ft.	.329 sq. in. per ft. of width
24 Gauge	1.5 lbs. per sq. ft.	.439 sq. in. per ft. of width
22 Gauge	1.88 lbs. per sq. ft.	.548 sq. in. per ft. of width
20 Gauge	2.25 lbs. per sq. ft.	.658 sq. in. per ft. of width

No. 26 GAUGE		No. 24 GAUGE		No. 22 GAUGES	
Total Load	Total Deflection	Total Load	Total Deflection	Total Load	Total Deflection
30 lbs.	$\frac{1}{8}$ inch	125 lbs.	$\frac{1}{8}$ inch	170 lbs.	$\frac{1}{8}$ inch
80 lbs.	$\frac{1}{4}$ inch	150 lbs.	$\frac{1}{4}$ inch	270 lbs.	$\frac{1}{4}$ inch
130 lbs.	$\frac{3}{8}$ inch	175 lbs.	$\frac{3}{8}$ inch	370 lbs.	$\frac{3}{8}$ inch
180 lbs.	$\frac{1}{2}$ inch	200 lbs.	$\frac{1}{2}$ inch	518 lbs.	$\frac{1}{2}$ inch

Our catalog shows views where Ferroinclave has been used. It will be sent free on application

"A.B.C." SYSTEMS

Turner Construction Company

Contractors and Engineers for Reinforced-Concrete Construction

11 BROADWAY
 NEW YORK, N. Y.

Branch Office: BUFFALO, N. Y., 312 Prudential Building

SERVICES—We are Contractors and Engineers for REINFORCED-CONCRETE BUILDING CONSTRUCTION, making a specialty of INDUSTRIAL BUILDINGS

OUR SPECIALTY—We confine ourselves exclusively to reinforced-concrete building construction, making a specialty of industrial buildings, such as mills, factories, warehouses, cold-storage plants, printing-houses, lofts, garages, stables, etc. Our technically-trained and experienced organization enables us to execute work of this character in a most satisfactory way. It is by means of this thorough organization that we can guarantee delivery of concrete buildings in favorable comparison with erection time of other types of building.

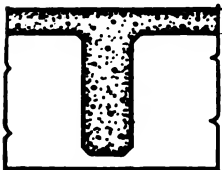
CO-OPERATIVE SERVICE—We are glad to furnish, gratis, approximate estimates or formal bids on reinforced-concrete building work of all kinds. We consider it a privilege to confer with architects for the purpose of showing the economy obtained by reinforced concrete in competition with steel- or mill-constructed buildings.

We contract for reinforced-concrete work on either the "lump-sum," "percentage" or "cost-plus-a-fixed sum" forms of contract.

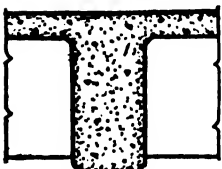
REFERENCES—Architects are invited to compare the buildings erected by our company with the work of any other company engaged in reinforced-concrete construction. As a guarantee of our work we can refer to all the architects and owners for whom we have constructed buildings in different parts of the United States. A list of such references, with illustrations of the buildings, will be gladly sent on inquiry.

SIZE OF STRUCTURAL MEMBERS—The following data give the approximate size of structural members, and provide the necessary information for calculating clearances. These tables are based on the Building Regulations of the City of New York.

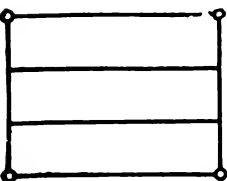
The sizes shown for the reinforced-concrete column are the most economical sizes. The diameters can be decreased as much as 15 per cent by increasing the reinforcement. This involves some additional expense.



SECTION OF
TYPICAL BEAM



SECTION OF
TYPICAL GIRDER



PLAN OF
TYPICAL PANEL

"A.B.C." SYSTEMS

TABLE NO. 1. BEAMS, 6' 0" O. C.

Span Live Load	12' 0"	14' 0"	16' 0"	17' 0"	18' 0"	19' 0"	20' 0"	22' 0"	25' 0"
120 lbs.	6x 8	6x 8	6x 9	6x10	6x11	6x12	6x13	6x14	7x16
150 lbs.	7x 5	7x 7	7x 8	7x 8	7x 9	7x10	7x11	7x13	8x13
200 lbs.	6x 8	6x 9	6x11	6x12	6x13	6x14	6x15	7x16	7x17
250 lbs.	7x 9	7x10	7x12	7x13	7x14	7x15	8x15	8x17	8x19
300 lbs.	6x12	6x15	6x17	7x16	7x17	7x18	7x21	8x20	8x23
	7x10	7x13	7x15	8x14	8x15	8x16	8x18	9x17	9x21
	6x14	6x17	7x17	8x16	8x18	8x19	8x20	8x23	9x24
	7x12	7x15	8x15	9x14	9x15	9x17	9x18	9x20	10x22

TABLE NO. 2. GIRDERS, 18' 0" O. C.

Span Live Load	12' 0"	14' 0"	15' 0"	16' 0"	17' 0"	18' 0"	19' 0"	20' 0"	22' 0"
120 lbs.	8x11	8x12	8x13	8x15	8x16	8x18	8x19	9x19	9x20
150 lbs.	9x10	9x12	9x12	9x13	9x13	9x15	9x17	10x17	10x18
200 lbs.	8x13	8x16	8x16	8x18	8x18	9x17	9x19	10x18	10x19
250 lbs.	9x11	9x13	9x14	9x15	10x15	10x17	11x17	11x18	11x19
300 lbs.	8x16	8x19	9x18	9x19	10x20	10x21	10x23	11x22	12x23
	9x14	9x17	10x16	10x17	11x17	11x18	11x21	12x20	13x21
	9x17	10x18	10x20	10x21	11x21	12x21	12x23	13x23	13x25
	10x15	11x17	11x18	11x20	12x20	13x19	13x20	14x21	14x23
	10x18	11x19	11x21	12x20	13x21	14x21	14x23	14x24	14x26
	11x16	12x18	12x20	13x19	14x19	15x19	15x20	15x22	15x25

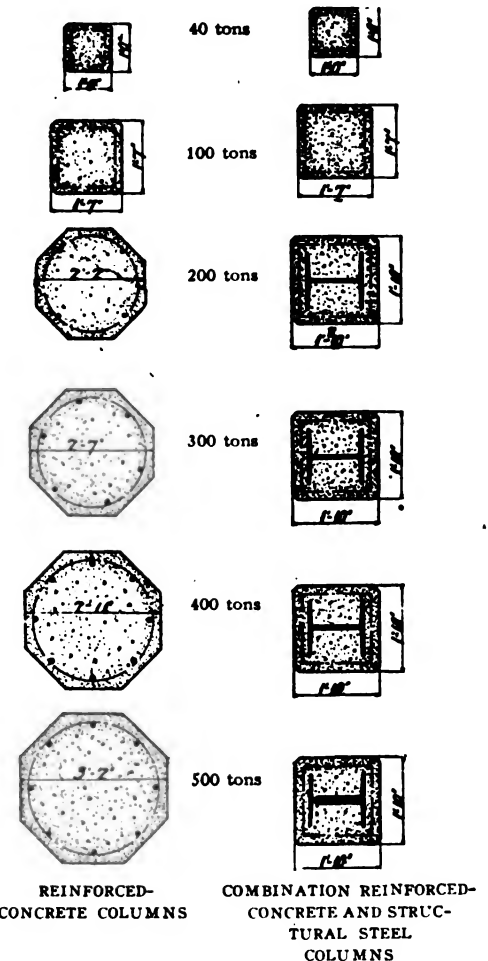
The above tables give, in inches, the width and depth of reinforced-concrete beams and girders for various spans and live loads. The first figure is the width, the second is the depth below the slab. The slab in all cases is 4" thick.

A choice of two different sizes is given for each case.

In table 1, the beams are spaced 6' 0" o. c.

In table 2, the girders are spaced 18' 0" o. c. and the beams framing into them are spaced one-third of the girder span apart, as per plan of typical panel.

Beam and girder sizes for other spacings may be obtained by computing the total load and comparing with loads carried by given beams and girders, assuming the dead load at 75 lbs. per square foot.



REINFORCED-
CONCRETE COLUMNS

COMBINATION REINFORCED-
CONCRETE AND STRUC-
TURAL STEEL
COLUMNS

Combination reinforced-concrete and structural-steel columns are used where the further decrease in size of columns is important. Such a column is not as economical as a simple reinforced-concrete column.

William B. Hough Company

Reinforcing Steel for Concrete Construction

Local Offices at
 MINNEAPOLIS, MINN.
 DES MOINES, IOWA
 DETROIT, MICH.
 INDIANAPOLIS, IND.
 OMAHA, NEBR.

Main Office
 MONADNOCK BUILDING
 CHICAGO, ILL.

Mills at
 PITTSBURG, PA.; GARY, IND.;
 MILWAUKEE, WIS.,
 and other points
 Warehouses
 CHICAGO, ILL., and other centers

PRODUCTS—M/B SPECIAL OPEN HEARTH COLD-TWISTED STEEL BARS; BUILT-UP GIRDER FRAME REINFORCEMENT; COLUMN SPIRAL REINFORCEMENT AND SECURQ SUPPORTING SPACERS

CONSTRUCTION SUPPLIES—This company also handles: WIRE-MESH REINFORCEMENT, EXPANDED METAL, EXPANDED METAL LATH, WIRE LATH, METAL MATERIALS for Modern Buildings, including CORNER BEADS for all Services

STEEL STUDDING AND FURRING STRIPS, WALL PLUGS, WALL TIES, SHAFT HANGERS for Concrete Buildings, and a complete Line of Contractors' MACHINERY AND EQUIPMENT FOR REINFORCED-CONCRETE CONSTRUCTION

IMPORTANT PRELIMINARY—We consider a knowledge of M/B Special Open Hearth Cold-twisted Steel indispensable in the designing of reinforced concrete. We claim our material to be the one steel which exactly meets all the requirements of reinforced-concrete construction.

THE M/B BAR—The only steel bar which combines a high elastic limit with great ductility. It is rolled from new billet stock having approximately the specifications of low-carbon material, and —although the elastic limit is increased to 55,000–60,000 pounds by the process of manufacture—the original ductility of the metal is retained. M/B Steel has the great strength of high-carbon material *without its brittleness*, and the ductility of low-carbon material without its necessary excess weight and cost for meeting equal structural functions.

DETAILS—M/B Bars can be bent double without heating and can be conformed to the shapes required for less than half the cost of bending high-carbon bars. Manufactured in all sizes, advancing by sixteenths of an inch, and furnished in any lengths which can be handled by the transportation companies.

M/B BUILT-UP GIRDER FRAME REINFORCEMENT—M/B reinforcement is furnished in built-up frames when so required. The *patented arrangement* of the stirrups allows the stirrup steel to resist tension in the center of the girder, while the ends of the stirrup bars resist diagonal tension or shear.

DETAILS—Built collapsible for convenience in shipping. Maintained in the form at the proper distance from the bottom line of the beams. The bars are in ONE HORIZONTAL PLANE, therefore all operate at the greatest effective depth below the neutral axis.

"A.B.C." SYSTEMS



TRADE MARK

COLUMN SPIRAL REINFORCEMENT—Furnished of any diameter, pitch or size of spiral, either built-up and ready to place in

the column forms or collapsed ready for erection by the contractor. We also furnish spirals coiled in loose bundles, suitable for wiring to vertical bars on the job or building site. Round wire stirrups, bent to shape, or wire of any size and formed to any shape furnished on short notice.

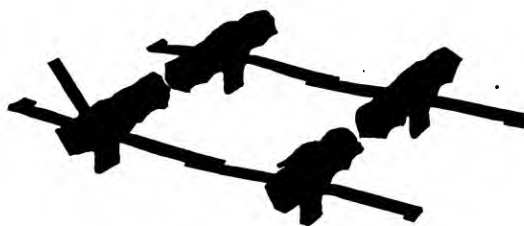


BUILT-UP COLUMN SPIRAL

Our shop capacity is equal to any requirements.



M/B SPECIAL OPEN HEARTH COLD-TWISTED BAR
 Elastic Limit approximately 60,000 lbs. per sq. inch
 Specimen was bent cold without fracture



"SECURQ" SUPPORTING SPACER

SECURQ SUPPORTING SPACER—This spacer holds the bars in position at the correct distance from the bottom of the slab, and locates them evenly and accurately at the specified distance from center to center. The prongs, when bent over the bar, clasp it in a vise-like grip, leaving no chance for slipping or sliding.

The cost of spacing and locking the bars in position is less than half the cost of wiring by the usual methods. Supplied in any lengths with prongs for spacing at any distances from center to center.

SHIPPING FACILITIES—The location of our mills and warehouses is such as to insure prompt deliveries to all parts of the United States.

GENERAL—We will, on request, submit a lump-sum proposal on the reinforcement COMPLETE of any concrete structure. Also, our engineering department is at the disposal of architects and engineers at all times.

SPECIAL LITERATURE—"DESIGNING DATA" contains valuable data on reinforced concrete construction; "THE BAR THAT NEVER FAILED" contains a scientific discussion of reinforcing steel; "METAL MATERIALS FOR MODERN BUILDINGS" describes many up-to-date building specialties. ANY OR ALL OF THESE BOOKS WILL BE SENT FREE ON REQUEST.



M/B BUILT-UP GIRDER FRAME

North Western Expanded Metal Co.

Telephone
Harrison 799

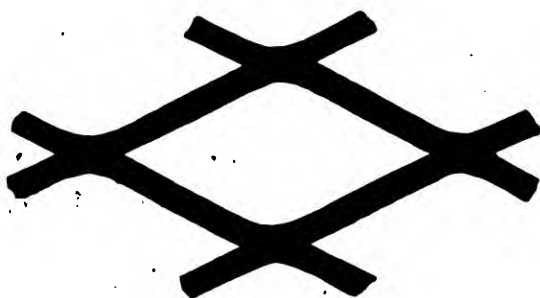
930-955 OLD COLONY BUILDING
CHICAGO, ILL.

Factories
CHICAGO, ILL.
JEANNETTE, PA.

For our Catalog on Expanded-Metal Plastering Lath, etc. see Section 12A, Cat. 1

PRODUCTS—EXPANDED METAL for Reinforcing Floor Slabs, Roof Slabs, Culverts, Slab Bridges, Girder Bridges, Arch Bridges, Sewers, Tanks, Walls and Burial Vaults

NORTH WESTERN EXPANDED METAL—This is a fabric reinforcement made by cutting staggered slits in sheet steel and then expanding the material into diamond-shaped meshes. This gives a fabric which is a solid network of steel, positively joined together at all intersections, and which is stronger than any system of mechanical or welded joints can possibly be.



SIZES—It is generally conceded that the three-inch mesh is the most practical for reinforcing concrete. The table at the right gives the stock sizes in which we can furnish this material. While these are the sizes carried in stock at our factory, they are not the only sizes in which we can furnish expanded metal for reinforcing. On orders of over 5000 square feet we can cut any area per 12 inches of width, from .06 sq. in. to 40 sq. in.

The smaller meshes are used for screens, etc.

For reinforcing concrete burial vaults we are furnishing a special 1/2-inch diamond mesh made from 26-gauge steel.

UNIFORM STANDARDS—Particular attention is called to the Uniform Standards for designating the sizes of Expanded Metal. By this system the first two numbers give the area per 12 inches of width, and the last figure, or figures, give the sizes of the mesh. This enables the designer to decide at once the proper material to use.

ENGINEERING SERVICES—The services of our Engineering Department are free of charge for consultation or preparing estimates for users of our material.

DESIGNING DATA—We shall be pleased to furnish our pocket-size "Designing Data Booklets" to anyone who will send us name and address. These two books will be found invaluable to designers of reinforced concrete.

"A.B.C." SYSTEMS

STOCK SIZES—EXPANDED METAL FOR SCREENS, ETC.

No.	Weight, Pounds per Square Foot	Widths Feet	Lengths Feet
20-1 1/2	.68	3' 6", 7' 0"	8
25-3/4	.85	3', 6'	8
10-3/4	.34	3', 6'	8
10-1 1/2	.34	2, 3, 4, 6	8 and 12
20-1 1/2	.68	3, 4, 6	8 and 12
10-2 1/4	.34	2, 3, 4, 6	8 and 12
13-2 1/4	.44	2, 3, 4, 6	8 and 12

STOCK SIZES—3" MESH EXPANDED METAL FOR REINFORCING CONCRETE

No.	Weight, Pounds Per Square Foot	Widths Feet	Lengths Feet
06-3	.2	2, 3, 4, 5, 6, 7, 8	8 and 12
10-3	.34	2, 4, 8	8 and 12
15-3	.5	2, 3, 4, 6, 8	8 and 12
16-3	.55	2, 3, 4, 6, 8	8 and 12
20-3	.68	3' 3" or 6' 6"	8 and 12
25-3	.85	2, 3, 4, 6, 8	8 and 12
30-3	1.02	4', 8'	8 and 12
32-3	1.07	2, 3, 4, 6, 8	8 and 12
35-3	1.185	2', 4', 7' 6", 8'	8 and 12
40-3	1.36	3' 6", 7' 0"	8 and 12

Order by number and give size of sheets, thus: No. 25-3—4'x8' sheets (width first).

First two figures of number give area per 12" of width. The remaining figures give width of mesh. For example: No. 06-3 has an area of .06 square inch per 12" of width and has a mesh 3" wide.



A PORTION OF THE FLOORS IN THE PUEBLO COUNTY COURT HOUSE AT PUEBLO, COLORADO

North Western Expanded Metal was used for reinforcing the concrete floor slabs. The material used in this building was a 3-inch mesh weighing .29 pounds per square foot. This illustrates the ease and rapidity with which Expanded Metal can be placed in the forms.

The Cellular Metal Company

Manufacturers of
Metal Fabric for Fireproof Construction
CINCINNATI, OHIO

PRODUCTS—CELLULAR METAL and KEYRIDGE, STRUCTURAL FIREPROOF FABRICS

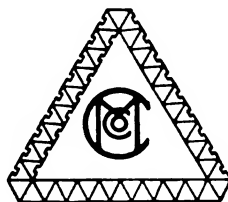
DESCRIPTION—Cellular Metal is made of rust-resisting iron only. It is a fireproof building material for floors, roofs, and protected in the United States and foreign countries by patents owned and controlled by this Company. It is made in three types, viz.: plain, single-groove and double-groove. (See Figs. 1, 2 and 3.) Sections are interchangeable and interlock by sliding into each other, forming a monolithic floor or roof surface.

Cellular Metal is formed into a series of continuous triangles, 2 inches deep, containing dead air cells; as shown in cuts. This means combined strength and insulation. A great saving in the cost of Structural Work is obtained by the reduction in the Structural Tonnage due to the light dead load of Cellular-Metal construction.

Sections are laid directly on the structural work, requiring no centering forms, or false work. Cellular Metal is erected more rapidly and at less cost than any other type of fireproof construction.

Cellular Metal, covered with concrete above and with plaster below, insures the strongest type of fireproof floor construction.

For finished wood floors, wood stringers or nailing strips are imbedded in the concrete in the usual way. The concrete also forms a base for Terrazo, Mosaic, etc.



CELLULAR-KEYRIDGE

TESTS—Cellular Metal and Keyridge have been tested and are approved by the Building Departments of New York, Pittsburgh, Cincinnati, etc., as fireproof construction.

ROOFS—For light, fireproof insulating slab construction, Cellular-Metal Fabrics merit investigation. Work constructed with them does not sweat, due to the dead air cells formed by the fabric in the concrete, and they carry the live loads independently of the concrete. Any composition may be laid directly against the metal and either plastered or left plain below.

SPECIAL APPLICATIONS—Cellular Metal has been used most successfully for these applications: Mezzanine Floors, Porches, Refrigerating Rooms, Ovens, Bank and Office Vaults, Fireproofing Boiler and Engine Rooms, Ceiling over Furnaces, and for Elevator Shafts, Bath Room Floors, Dryer Rooms, etc.

A FEW CELLULAR METAL REFERENCES—

Taylor Building, Pittsfield, Mass. Floors and Roof.
Fire Department, Pittsfield, Mass. Floors, Engine House.
Mergenthaler Linotype Building, Brooklyn, N. Y. Floors Five Bridges Connecting Buildings.
Roosevelt Hospital, New York City. Roofs, Convalescent Porches.
New Plaza Hotel, New York City. Refrigerating and Humidor Rooms.
Harris Theatre, Pittsburgh, Pa. Floors and Roof.
Dean Building, Pittsburgh, Pa. Floors.
The A. H. Villas Co., Chicago, Ill. Boiler Room.
Royal Insurance Building, Chicago, Ill. Sundry Floors.
C. & E. I. Railway Co., Danville, Ill. Floors, Freight House.
U. S. Tire Building, Cincinnati, O. Floors and Roof.
Times Star Building, Cincinnati, O. Mezzanine Floor.
Globe-Wernicke Building, Cincinnati, O. Roof.
Empire Theatre, Cincinnati, O. Floors and Roof.
Family Theatre, Cincinnati, O. Floor.
The Fleischmann Co., Cincinnati, O. Floors and Roof Dry House.
Lackmann Brewing Co., Cincinnati, O. Roof.
City of Cincinnati. Roof, Second District Police Station.
Neil House, Columbus, O. Floors, Kitchen and Refrigerating Room.
Mount Vernon Railway & Light Co., Mount Vernon, O. Roof of Power House.
Hanley Theatre, Dayton, O. Roof.
Champion Coated Paper Co., Hamilton, O. Roof.
Blue Grass Inn, Newport, Ky. Floors.
Stamper Theatre, Lexington, Ky. Floors.

CELLULAR METAL CONCRETE SLABS.

Safe Loads in Table are Net Loads Exclusive of Weight of Slab in Pounds Per Square Foot. For Total Safe Load, Add Weight of Slab.

Safe loads = $\frac{1}{4}$ net breaking loads.

Slab 3.06" thick, including Cellular. Weight 20.63 lbs. per square foot. Age, 18 months Mix, 1:4			Slab 4.00" thick, including Cellular. Weight 32.42 lbs. per square foot. Age, 18 months Mix, 1:4		
Clear Span, feet	Safe Load	Deflection, inch	Clear Span, feet	Safe Load	Deflection, inch
3...	1298	.049	3...	2333	.039
4...	728	.087	4...	1310	.070
5...	464	.135	5...	835	.109
6...	321	.194	6...	577	.156
7...	234	.263	7...	422	.212
8...	178	.341	8...	321	.275
9...	140	.429	9...	252	.345
10...	112	.523	10...	203	.422
11...	92	.629	11...	166	.508

Above tests of No. 24 Gauge Cellular. All slab dimensions for thickness include depth of Cellular.
Cement and sand measured by volume. (Loose, not compacted.)



FIG. 1.—PLAIN
Depth, 2 inches. Width, 7 inches.
Any length up to 11 feet 6 inches.
Approximate weight, 24 Gauge,
4 $\frac{1}{2}$ pounds per square foot. Approximate weight, 26 Gauge, 3 $\frac{1}{2}$ pounds per square foot



FIG. 2.—SINGLE GROOVE
Depth, 2 inches. Width, 6 inches.
Any length up to 11 feet 6 inches.
Approximate weight, 24 Gauge,
5 pounds per square foot. Approximate weight, 26 Gauge, 3 $\frac{1}{4}$ pounds per square foot



FIG. 3.—DOUBLE GROOVE
Depth, 2 inches. Width, 6 inches.
Any length up to 11 feet 6 inches.
Approximate weight, 24 Gauge,
5 $\frac{1}{4}$ pounds per square foot. Approximate weight, 26 Gauge, 4 pounds per square foot

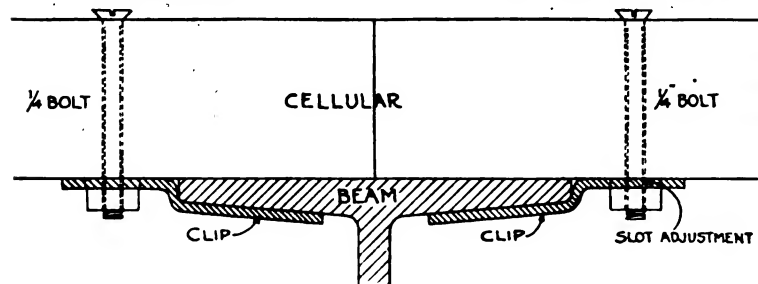


FIG. 4.—CROSS SECTION SHOWING METHOD OF FASTENING CELLULAR METAL TO I BEAMS

"A.B.C." SYSTEMS

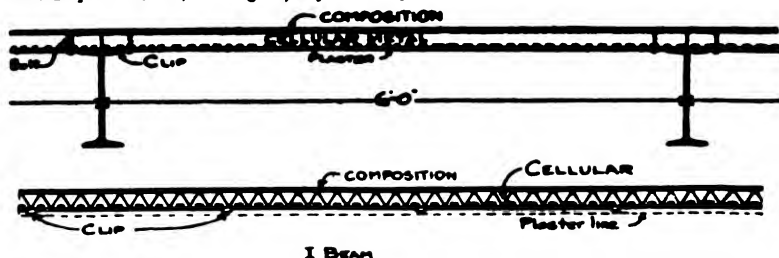


FIG. 5.—CROSS AND LONGITUDINAL SECTIONS OF COMPOSITION ROOF LAID DIRECTLY ON CELLULAR METAL, PLASTERED ON UNDER SIDE

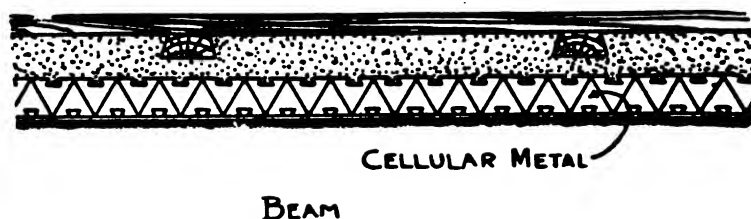


FIG. 6.—SECTION CONCRETE SLAB ON CELLULAR METAL, WOOD FLOOR ON SLEEPERS

Continued on next page

KEYRIDGE—Is made 24, 26 and 28 gauge, fabricated into sheets 24 inches wide, any length up to 12 feet. It is not expanded in any way. The grooves are dovetailed and perforations burred out, forming a 3/16" web, adding great strength and stiffness to the sheet. The dovetail Key and webbed perforations act as a reinforcement and form a perfect bond for the concrete or plaster. Keyridge is admirably adapted for Floors, Roofs, Partitions, Suspended Ceilings, Sidings, Furring, etc. FOR CONCRETE FLOORS, ROOFS AND WALLS—Keyridge is a superior reinforcement, requiring no centering up 4-foot spans and all forms or falsework is eliminated. FOR PARTITIONS—Keyridge requires no Studding or Channels. All that is necessary is to

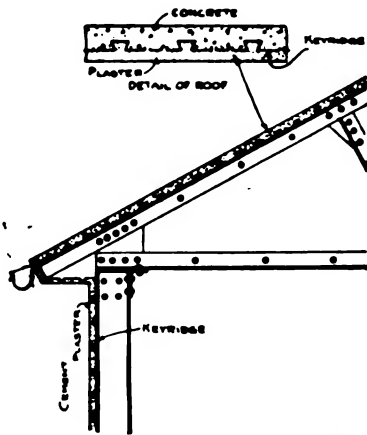


FIG. 7. ROOF SLAB ON PITCHED ROOF REINFORCED WITH KEYRIDGE METAL

attach it to the floor and ceiling. Blue print details furnished on application. FOR SUSPENDED CEILINGS—Keyridge cuts out all cross channels. The increased spans permitted by its use, and simple method of erecting, make a further reduction in cost. FOR SIDING—Keyridge may be placed with the grooves vertical or horizontal. Either method will give the maximum strength and insure a bond with the plaster.

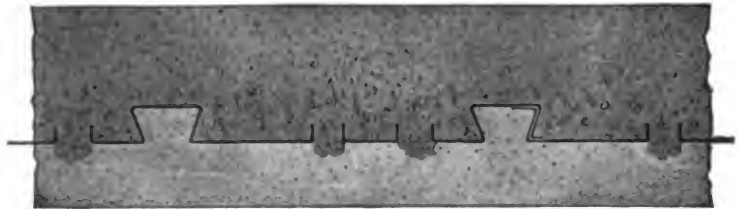


FIG. 11. SHOWING STRONG BOND BETWEEN KEYRIDGE CONCRETE AND PLASTER



FIG. 8. BUILDING SHOWING KEYRIDGE WALLS AND PARTITIONS With Cellular Metal Floors and Roof

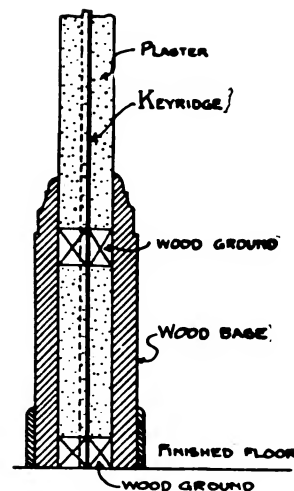


FIG. 12. PARTITION—VERTICAL SECTION

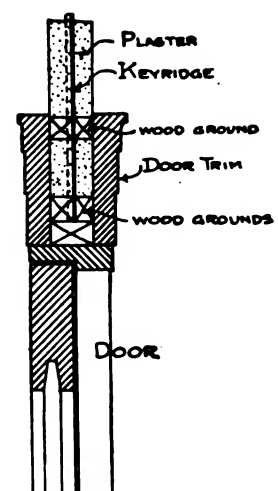


FIG. 13. PARTITION—VERTICAL SECTION AT DOOR

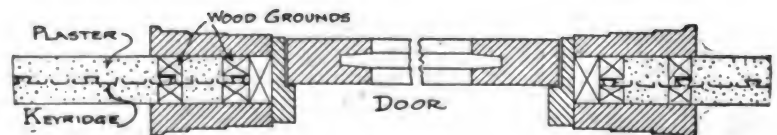


FIG. 14. PARTITION—HORIZONTAL SECTION AT DOOR



FIG. 9. KEYRIDGE

TABLE OF WEIGHTS

No. 24 Gauge, Approx. Weight, 1 1/4 lbs. per sq. ft.
No. 26 " " " 1 1/10 " " "
No. 28 " " " 1 1/10 " " "



FIG. 10. KEYRIDGE CONCRETE SLAB

"A.B.C." SYSTEMS

KEYRIDGE CONCRETE SLABS

Safe loads in table, are net loads exclusive of weight of slab, in pounds per square foot. For total safe load, add weight of slab.
Safe loads—1/4 net breaking loads.

Slab 1.875" thick, including Keyridge Weight 20.3lb per sq. ft. Age, 114 days Mix, 1:2 1/2			Slab 2.47" thick, including Keyridge Weight 26.8lb per sq. ft. Age, 113 days Mix 1:2 1/2			Slab 2.96" thick, including Keyridge Weight 32lb per sq. ft. Age, 112 days Mix, 1:2 1/2			Slab 3.434" thick, including Keyridge Weight 37.46lb per sq. ft. Age, 108 days Mix, 1:2 1/2			Slab 4.00" thick, including Keyridge Weight 41.66lb per sq. ft. Age, 100 days Mix, 1:2 1/2			Slab 4.475" thick, including Keyridge Weight 48.10lb per sq. ft. Age, 107 days Mix, 1:2 1/2		
Clear Span, feet	Safe Load	Deflection, inch	Clear Span, feet	Safe Load	Deflection, inch	Clear Span, feet	Safe Load	Deflection, inch	Clear Span, feet	Safe Load	Deflection, inch	Clear Span, feet	Safe Load	Deflection, inch	Clear Span, feet	Safe Load	Deflection, inch
3..	281	.054	3..	363	.030	3..	449	.022	3..	560	.017	3..	593	.012	3..	663	.009
4..	156	.094	4..	201	.053	4..	249	.038	4..	311	.030	4..	329	.020	4..	368	.016
5..	98	.144	5..	126	.081	5..	156	.058	5..	196	.047	5..	207	.031	5..	231	.025
6..	66 1/2	.203	6..	86	.115	6..	106	.082	6..	133	.066	6..	140	.044	6..	156	.035
7..	47 1/2	.268	7..	61	.151	7..	76	.109	7..	95	.087	7..	100	.058	7..	112	.046
8..	35	.337	8..	45	.190	8..	56	.137	8..	71	.111	8..	74	.073	8..	83	.059
9..	27	.417	9..	34	.229	9..	43	.169	9..	54	.135	9..	57	.091	9..	63	.071
10..	21	.494	10..	26	.267	10..	33	.197	10..	42	.161	10..	44	.106	10..	49	.085
11..			11..	21	.316	11..	26	.227	11..	33	.186	11..	34	.120	11..	38	.096
12..			12..			12..	21	.260	12..	26	.206	12..	27	.135	12..	30	.107

Above tests of No. 24 Gauge Keyridge.
All slab dimensions for thickness include depth of Keyridge.
Cement and sand measured by volume. (Loose, not compacted.)

Electric Welding Company

Manufacturers of

The Cummings System of Concrete Reinforcement

PITTSBURGH, PA.

PRODUCTS—(Patented) FOLDED WIRE FABRIC, SLAB ROD UNITS, LOOP TRUSS, TWISTED RODS, ANCHOR RODS, LOOSE BENT RODS, STIRRUPS, JOINT FASTENINGS, CHAIR LOCK, HOOP-AND-BAND COLUMNS, FLAT SPIRALS, HELICAL HOOPING for Column-spacing Bar, COLUMN TIES, STAIR CURB NOSING AND CORNER BEAD

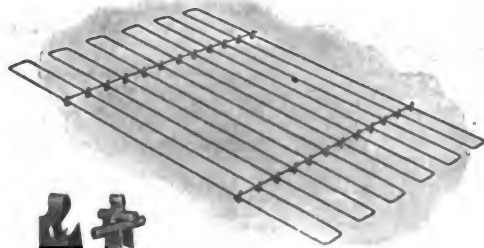
CEILING INSERTS, CONCRETE PILES AND POLES, UNIVERSAL STEEL WINDOW SASH AND DOORS, UNIVERSAL ROD BENDERS, UNIVERSAL ROD-STRAIGHTENING MACHINE, AND UNIVERSAL STEEL FORMS

THE CUMMINGS SYSTEM OF CONCRETE REINFORCEMENT—In this system are embodied all the latest methods of reinforcing. During the ten years in which it has been used it has shown itself to be both simple and thoroughly practical. It is, also, an economical system, as explained in detail below.

The Cummings System can be suitably applied to any structure that can be built of reinforced concrete, and has been used for residences, factories, machine shops, warehouses, grain elevators, bins, tanks, bridges, arches, railroad trestles, sewers, curbing, railroad cross-ties, street railway trolley poles, concrete piles, telegraph poles, fence and clothes posts, etc.



CHAIR LOCK



SLAB ROD UNITS

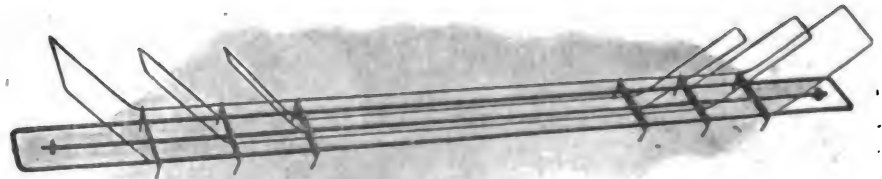
ADVANTAGES—The Cummings System excels in its details by combining in one system all the merits of other schemes. It is economical to use because it saves labor on the job, the reinforcement being furnished in factory-made units. This not only saves time in placing, but eliminates inaccurate and uncertain work.

The various units are assembled at the factory, tagged for their proper place in the work, and shipped flat at minimum freight rates. The handling and storage on the job is the most convenient method possible; because the number of separate unit frames in our system is less than in any other method in use.

The Cummings System is theoretically correct because it represents an economical and technically ideal distribution of metal in the concrete. The shear members are part of the main rods, and the ends of all rods are anchored. This system is a guarantee for the accurate spacing of the reinforcement, and affords every facility for inspection before placing of the concrete.

"A.B.C." SYSTEMS

MATERIAL—Our material is obtained from a superior Open-Hearth steel rolled from new billet stock. The physical properties conform to the Standard Specifications for concrete reinforcement of the American Society for Testing Materials. All steel is submitted to test and report of the Lehigh Valley Testing



LOOP TRUSS



CONCRETE PILES

Laboratory, Pittsburgh, whose certificates are furnished to our customers gratis.

FACILITIES—Our shops are especially equipped for the fabrication of reinforcement for concrete, with a capacity to handle 50 tons per day. We carry a stock of steel to meet telegraphic demands.

We have railroad-siding connection to all the railroads of the Pittsburgh District and can make prompt shipment on short notice.

PRICES—Prices will be cheerfully furnished for delivery to any railroad point in the United States, Canada, Mexico, or to any port for export.

Our products are sold
f. o. b. our shops or
f. o. b. destination.



SPACING BAR

On plans and specifications being furnished, we shall be pleased to quote a lump-sum price for the complete reinforcement of any concrete structure, at short notice.

CO-OPERATIVE SERVICE—We maintain an information bureau for the purpose of giving aid regarding any problems involving the use of the Cummings System. This does not involve any obligation whatsoever. To further this co-operation we invite correspondence.

SECTION 12

General Metallic Fireproofing and Special Devices

(Reinforced Concrete Construction see Section 11)

Section Synopsis

A. PLASTERING LATH. Wire Lath, Expanded-metal Lath; Hangers and Clips; Sheet-metal Punched and Formed Lath; Corner Beads, and Similar Appliances

B. Protective Corner Bars, for Reinforced Columns; Special-design Rolled Furring, Studding, Channels, etc.; Sheet-metal (metal lumber) Beams, Studding, Furring, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.
				1 to 8	9 to 16	17 to 24	25 to 32	33 to 48	
REGULAR CLASSIFICATION									
A	1	Corner beads and similar appliances							
	2	Hangers and clips							
	3	Plastering lath:—							
	4	Expanded metal							
	5	Sheet metal, punched and formed							
B	21	Wire mesh							
	22	Protective corner bars, for reinforced columns, curbs, etc.							
	23	Sheet-metal (metal lumber) beams, studding, furring, etc.							
SPECIAL CLASSIFICATION									
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.									
	33	Concrete reinforcement:—							
	34	Column spirals (S. 11)							
	35	Expanded-metal (S. 11)							
	36	Wire mesh (S. 11)							
	37	Fencing, guards, sundries:—							
TRADE NAMES AND BRANDS									
"Cambridge," metal plastering lath, S. 16 A, Catalog 2									
"Carboco Coated," metal plastering lath									
"Kno-Burn," metal plastering lath									
"20th Century," metal plastering lath									
Catalog A 1									
See also the Catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES.									
American Sheet & Tin Plate Co. S. 16 A, Cat. 2 (Sheet metal plastering lath)									
Electric Welding Co. S. 11, Cat. 6 (Corner beads, curb nosing, etc.)									
Hough Co., Wm. B. S. 11, Cat. 3 (Plastering lath, corner beads, etc.)									
Northwestern Expanded Metal Co., Chicago, Ill.		A 1		1 2 3		22		34 36	

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
American Metal Ceiling Co. Brooklyn, N. Y.	1 4		22 23			Corrugated Bar Co. Buffalo, N. Y.	3					Michigan Wire Cloth Co. Detroit, Mich.	5				
American Metal Stamping Co. Germantown, Philadelphia, Pa.	1 4					Darby & Sons Co., Edw. Inc. Philadelphia, Pa.	1 3 5					Pidgeon-Thomas Iron Co. Memphis, Tenn.	1 4		23		
American Rolling Mill Co. Middletown, Ohio	1 3 4		21 22 23			Eastern Expanded Metal Co. Boston, Mass.	2 3		21 22 23		33 34 36	Rogers-Shear Co. Warren, Pa.	1				
American Steel & Wire Co. Chicago, Ill.	5					Expanded Metal Engineer- ing Co. New York, N. Y.	3					Schraiwieser Fireproof Con- struction Co. Brooklyn, N. Y.	4				
Berger Mfg. Co. Canton, Ohio	1 3 4 5					Fuller Bros. & Co. New York, N. Y.	1 4					Sharon Steel Hoop Co. Chicago, Ill.	1		22		
Bostwick Steel Lath Co. Niles, Ohio	1 3 4		21 22 23			Gara-McGinley Co. Philadelphia, Pa.	1					Snow Wire Works Co. Rochester, N. Y.	5				
Buffalo Expanded Metal Co. Buffalo, N. Y.	3				34 36	General Fireproofing Co. Youngstown, Ohio	1 3 4 5		21 22 23			Steel Protected Concrete Co. Philadelphia, Pa.	1		21		
Buffalo Steel Co. Tonawanda, N. Y.	5		22 23			Goff, Horner & Co., Ltd. Pittsburgh, Pa.	1 3					Sykes' Metal Lath & Roofing Co. Niles, Ohio	1 3 4				
Buffalo Wire Works, Inc. Buffalo, N. Y.	5					Kansas City Wire & Iron Works Kansas City, Mo.	5					Syracuse Wire Works Syracuse, N. Y.	5				
Chicago Building Specialty Co. Chicago, Ill.	1 3		21 22 23		34	Knapp Bros. Mfg. Co. Chicago, Ill.	1					Tile Partition & Reinforcing Co. Cleveland, Ohio			22 23		
Clinton Wire Cloth Co. Clinton, Mass.	5					Ludlow-Saylor Wire Co. St. Louis, Mo.	5					Wheeling Corrugating Co. Wheeling, W. Va.	5				
Clip Bar Mfg. Co. Philadelphia, Pa.	1		21			Meyers Mfg. Co., Fred J. Canton, Ohio	5					Wright Wire Co. Worcester, Mass.	5				
Consolidated Expanded Metal Co's. Pittsburgh, Pa.	3											Youngstown Iron & Steel Co. Youngstown, Ohio	1 3				

North Western Expanded Metal Co.

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930-955 OLD COLONY BUILDING
CHICAGO, ILL.

Factories
CHICAGO, ILL.
JEANNETTE, PA.

For our Catalog on Expanded-Metal Reinforcement see Section 11, Cat. 4

PRODUCTS—KNO-BURN (Trade Mark) EXPANDED METAL PLASTERING LATH; 20TH CENTURY (Trade Mark) ACID-RESISTING EXPANDED METAL PLASTERING LATH; CARBOCO (Trade Mark) COATED EXPANDED METAL PLASTERING LATH; GALVANIZED EXPANDED METAL PLASTERING LATH

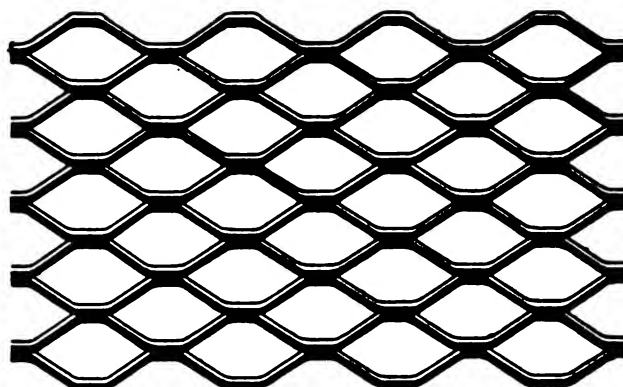
KNO-BURN EXPANDED METAL PLASTERING LATH—This is the original small-mesh lath. The shape of the mesh is such that the material completely imbeds itself and becomes a reinforcement as well as a holding device.

The downward dip of the strand insures a perfect "key," with 30 per cent less plaster than is required by other metal laths.

TWENTIETH CENTURY EXPANDED METAL PLASTERING LATH—This has all of the advantages of the Kno-Burn lath and has, in addition, acid-resisting qualities equal to any material known. Its great rigidity makes it the most popular acid-resisting lath in the field.

OUR CARBOCO PAINT—An acid-, alkali- and electrolysis-proof paint. This coating is manufactured especially for us and is not permitted to be used on any other metal lath.

PARTITIONS—We are in position to furnish channels for solid partitions, metal studs for hollow partitions, corner beads, staples, furring strips, and tie wire.



ACTUAL SIZE OF MESH OF ALL OF OUR EXPANDED METAL PLASTERING LATHS

LITERATURE—More detailed information regarding our material and the methods for using the same will be found in our "Kno-Burn Lath Catalog" and our "Overcoated Houses" booklet, sent free on request.



METAL STUD HOLLOW PARTITION.



WOOD STUD HOLLOW PARTITION.



SOLID PARTITION.



LIGHT PARTITION. METAL STUD.



LIGHT PARTITION. WOOD STUD.

Details for constructing solid and hollow walls, using either wood or steel studding

"A.B.C." SYSTEMS

SIZES AND WEIGHTS OF EXPANDED METAL LATH

Kno-Burn Lath	Weight per Bundle	Yards per Bundle	Sheets per Bundle	Weight per Yard
Size of Sheet 18x96 in.				
No. 27 Gauge	27 1/2 lbs.	12	9	2 1/2 lbs.
No. 26 "	30 "	12	9	2 1/2 "
No. 25 "	35 "	12	9	2.9 "
No. 24 "	40 1/2 "	12	9	3.4 "

Add 3/4 to 1 pound per square yard when galvanized.

20th Century Lath	Weight per Bundle	Yards per Bundle	Sheets per Bundle	Weight per Yard
Size of Sheet 18x96 in.				
No. 27 Gauge	28.8 lbs.	12	9	2.4 lbs.
No. 26 "	31.2 "	12	9	2.6 "
No. 25 "	37.2 "	12	9	3.1 "
No. 24 "	42.0 "	12	9	3.5 "

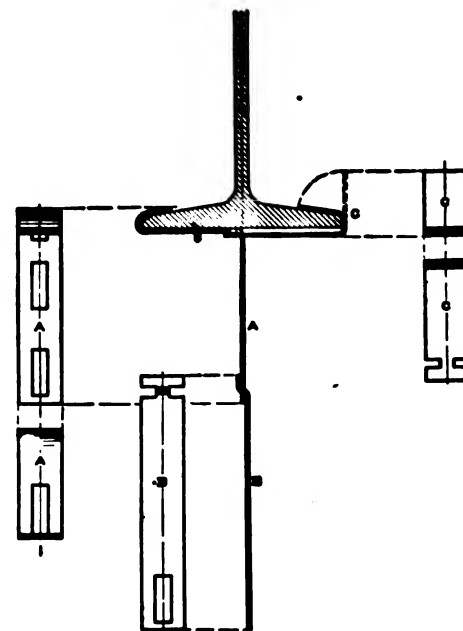
STAPLES

Per 100 Square Yards

Wood Staples, No. 14 gauge wire, 1 in. long,	10 lbs.
" " " " 1 1/4 " "	12 1/2 "
" " " " 1 1/2 " "	15 "
" " " " 2 " "	20 "
Brick " " " " 2 1/2 " "	40 "
" " " " 3 " "	50 "
" " " " 3 1/2 " "	60 "

CRIMPED STEEL FURRING

Width	Band Steel	Linear Feet Per Pound
1/4 in.	20-gauge	30 feet
1/2 " "	22 " "	20 " "
3/4 " "	22 " "	15 " "
1 " "	22 " "	10 " "



Our beam clip and suspension bar, shown here, afford the easiest method of suspending ceilings from solid rolled beams or concrete slabs. The beam clip consists of two pieces with interlocking joint at the center or line of suspension bar A, and the flange clip C. C. is thus rendered applicable to various widths of beam flanges without special forging or other provision.

The suspension bar is made in lengths varying from four to twelve inches so that the ceiling channels may be suspended at any desired depth. These bars have interlocking device as shown in sections B, B.

SUSPENDED CEILING CONSTRUCTION

**CLASSIFICATION PAGE OF
SECTION 13**

Building Materials and General Supplies (Not Manufacturers)
(Builders' Construction Equipment see Section 3)

Section Synopsis

**General Supply Houses and Distributors of Building Staples
such as: Brick, Lime, Cement, Sand, Gravel, Crushed Stone, Road**

Dressing, Plaster, Lath, Fireproofing, Drain Tile, Roofing Slate and Tile Nails, Paint, Sheathing Papers, Felt, Waterproofing, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
				1 to 8	9 to 16	17 to 24	25 to 32	
1	General supply houses of building staples such as:—							
2	Asbestos felt, cement, etc.							
3	Brick, drain tile, flue pipe, etc.							
4	Builders' iron work, coal holes, manholes, wall ties, etc.							
5	Cement, lime, plaster, sand							
6	Crushed stone, road dressing, gravel							
7	Encaustic tile, floor, wall, ceiling, fireplace							
8	Felt, sheathing papers, asphalt, tar, etc.							
9	Fireproofing, burnt tile, plaster blocks	1	Kane Co., John P. New York, N. Y.	2 3 4 5	12 13	22 24		
10	Fireplace equipments							
11	House paint, fillers, varnish, etc.							
12	Marble, native, imported							
13	Metal lath, all kinds							
14	Mortar colors, stains							
15	Nails, spikes, bolts, anchors, hangers, etc.							
16	Preservative coatings							
17	Ready roofing, damp course, roofers' cement, etc.							
18	Roofing shingles, wood							
19	Roofing slate and tile							
20	Sheet glass, clear, ground, fancy							
21	Terra cotta coping, chimney pots, etc.							
22	Terra cotta, structural and ornamental, faience, etc.							
23	Waterproofing materials and compounds							
24	White lead, red lead, red oxide, colors, linseed oil, etc.							
	Wood lath, spruce, pine, etc.							
TRADE NAMES AND BRANDS								
"Beaver," plaster wall board								
"Bishopric," plaster wall board								
"Harvard Stretchers," water-struck brick								
"Peake's Perfecta," roofing and floor tiles								
"Pyrobar," plaster partition blocks								
"Sackett," plaster board								
"Limeoid," prepared slacked lime								
"Trowel," brand Portland cement								

Manufacturers without Catalog data	Sub-Index Numbers				Manufacturers without Catalog data	Sub-Index Numbers				Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 8	9 to 16	17 to 24	25 to 32		1 to 8	9 to 16	17 to 24	25 to 32		1 to 8	9 to 16	17 to 24	25 to 32
A. & C. Stone & Lime Co. Indianapolis, Ind.	4 5				Houghten & Sons, H. Detroit, Mich.	2 4	12 13	20		New Jersey Co. New York, N. Y.	2			
Battjes Fuel & Building Ma- terial Co. Grand Rapids, Mich.	2 4 5 8	12	24		Houston Bros. Pittsburgh, Pa.	2	10	22		North Side Brick & Tile Works Napoleon, Ohio	2			
Brockett Cement Co., C. A. Kansas City, Mo.	4				Interstate Lumber Co. Anaconda, Mont.	1 4 7	13 16	19 24		Northwestern Lime Co. St. Paul, Minn.	4			
Candee, Smith & Howland Co. New York, N. Y.	2 4 8				Keeper & Co., A. B. Indianapolis, Ind.	4		20		Reeb, M. A. Buffalo, N. Y.	4			
Carolina Portland Cement Co. Birmingham, Ala.	2 4		23		Knickerbocker Lime Co. Philadelphia, Pa.	4 5		24			4			
Cleveland Builders' Supply Co. Cleveland, O.	2 4				Lynch Bros. Brick Co. Holyoke, Mass.	1 2 4 5				Streibich, J. C. Peoria, Ill.	1 7	16		
Cook & Brown Co. Oshkosh, Wis.	4				McArthur Brick Co. McArthur, Ohio	2				Union Building Material Co. New York, N. Y.	8			
Dee Co., Wm. E. Chicago, Ill.	4				Manchester Shale Brick Co. Harrisburg, Pa.	2				Union Lime Co. Los Angeles, Cal.	4			
Donnelly Brick Co. Berlin, Conn.	2				Maryland Lime & Cement Co. Baltimore, Md.	4 7	16	20		Western Brick & Supply Co. Hastings, Neb.	1 2 4 5 6 7 8	12 13 15 16		
Dolese & Shepard Co. Chicago, Ill.	4 5				Mayer, C. P. Bridgeville, Pa.	2 4 5 6 7 8	12 13 16	23 24		White Marble Lime Co. Manistique, Mich.	4 5		24	
Farnam Cheahire Lime Co. New York, N. Y.	4				Miller & Co., Clifford L. New York, N. Y.	4				Wisconsin Lime & Cement Co. Chicago, Ill.	4 5			
Hewitt & Bro., C. B. New York, N. Y.	1 7	16			Moore & Co., Warner. Richmond, Va.	4				Woodville Lime & Cement Co. Toledo, Ohio	4			
Hopkins Co., H. H. Chicago, Ill.	1 7	16			National Building Supply Co. Baltimore, Md.	2 4	12 13	20 21						

John P. Kane Co.

Manufacturers of Kane "Trowel" Brand Portland Cement

Dealers in Masons' Building Materials

MAIN OFFICE, 103 PARK AVENUE

NEW YORK, N. Y.

Telephone Connection

Distributing Yards

NEW YORK
 Foot E. 14th Street
 145th Street and Harlem River

BROOKLYN
 6th Street and Gowanus Canal
 Mills at CEMENTON, N. Y.

PRODUCT—KANE "TROWEL" PORTLAND CEMENT

OUR BUSINESS—We are a MASONS' BUILDING MATERIAL HOUSE handling everything required by the Masons' Trade as follows:

BRICK: Common, Croton, Face, Bullnose, Octagon, Hollow, and the several Varieties of FIRE CLAY BRICK

We carry in Stock:

Practically every popular Brand of PORTLAND AND ROSENDALE CEMENTS; WHITE AND NON-STAINING CEMENTS, both Domestic and Imported; FRF CH AND GERMAN BRANDS OF PORTLAND

The different Brands of LIME; HYDRATED LIME, etc.

READY-MIXED OR PREPARED MORTAR

All Kinds of PLASTERING MATERIALS, PLASTER BOARD, MORTAR BOARD; LATH, both Wood and Metal; READY-MIXED MORTAR for Browning and Scratch-Coat; MARBLE DUST, HAIR, SLATE; KEENE'S CEMENT, Imported and Domestic

BROKEN STONE; GRAVEL; WHITE AND BROWN SAND

TILE PIPE of all Kinds; SEWER PIPE

WATERPROOFING COMPOUNDS

MANHOLE FRAMES AND COVERS

KANE "TROWEL" PORTLAND CEMENT—We offer our "Trowel" Portland Cement with the knowledge that it will be found in every respect equal to the very best of the high grade Portlands, whether imported or domestic.

The raw materials used in its manufacture are limestone and clay of pure and uniform quality and correct chemical composition. They produce a Portland Cement unequaled by any other domestic product in the Eastern market.

The following analysis is a fair average of Kane's "Trowel" Brand:

COPY OF CERTIFICATE

Analysis of "Trowel" Portland Cement by Mr. Charles F. McKenna, 50 Church St., New York City.
 Messrs. John P. Kane Company, Feb. 8, 1909.
 103 Park Ave., City.

Gentlemen:—I have submitted to analysis a sample of "Trowel" Portland Cement, recently taken by my representative at the mill, Cementon, N. Y., and I find the following to be its composition:

Silica.....	21.80
Alumina.....	6.25
Sesquioxide of Iron.....	4.23
Lime.....	62.12
Magnesia.....	1.67
Sulphuric Acid, Anhydrous.....	1.08
Undetermined—	
Alkalies, Water, etc.....	2.85

100.00

Respectfully,
 (Signed) CHAS. F. MCKENNA, PH.D.

"A.B.C." SYSTEMS



OUR FACILITIES—We are equipped to give perfect service on any order, large or small. All receive equal attention. Our stock is complete and places **Everything in Masons' Building Materials** within convenient reach at a few hours' notice. Our facilities enable us to offer **unsurpassed quality at low prices.**

REFERENCES—Prominent Buildings in which "Trowel" Portland Cement has been used:

LOCATION IN NEW YORK, N. Y.
 Hotel Martinique, 32d St. and Broadway
 National City Bank, Wall and William Sts.
 Belnord Apartment, 86th and 87th Sts. and Broadway
 Everett Building, 17th St. and 4th Ave.
 Downtown Building, 60 Broadway
 Metropolitan Car Barns, 54th St. and 9th Ave., and 146th St. and 7th Ave.
 Bronx Theater, 150th St. and Melrose Ave.
 Raymond Street Jail, Brooklyn, N. Y.
 Martin Building, 31st St. and Broadway
 U. S. Government Buildings, Ellis Island
 Grand Central Station, 42d St.
 Knickerbocker Hotel, 42d St. and Broadway
 McCreery's Store, 34th St., near 5th Ave.
 New York Tribune Bldg.
 New York Police Headquarters, Grand and Centre Sts.
 Rapid Transit Power House, 59th St.
 West Street Building, Cedar and West Sts.
 Dept. Docks and Ferries, N. Y.
 Goodrich Building, 57th St. and Broadway
 Colony Club, Madison Ave.
 Columbia Dormitories, A and B, 116th St.
 New York Public Library, 42nd St.
 Engineers' Club, 40th St.
 Kingsbridge Power House
 Mount Sinai Hospital
 Tabor Building, Wall and Pearl Sts.
 U. S. Naval Academy Bldg., Annapolis, Md.
 Erie Railroad Bridge, Hillburn, N. Y.
 Vassar College, Poughkeepsie, N. Y.

Contractor
 C. T. Wills, Inc.
 Geo. A. Fuller Co.
 Geo. A. Fuller Co.
 Geo. A. Fuller Co.
 John T. Brady & Co.
 Am. Real Estate Co.
 John T. Brady & Co.
 C. T. Wills, Inc.
 North Eastern Const. Co.
 John Peirce Co.
 J. E. & A. L. Pennock
 Thompson-Starrett Co.
 D. C. Weeks & Son
 Gillespie, Walsh & Gillespie
 John Peirce Co.
 John Peirce Co.
 Dept. Docks and Ferries
 A. J. Robinson Co.
 Jacob & Youngs
 M. Reid & Co.
 Herman Probst
 Wm. L. Crow & Son
 I. A. Hopper & Son
 Norcross Bros. Co.
 Geo. A. Fuller Co.
 John Peirce Co.
 Clark & Company
 D. C. Weeks & Son

Architect
 H. J. Hardenbergh
 McKim, Mead & White
 Hiss & Weekes
 Goldwin Starrett & Van Vleck
 McKim, Mead & White
 A. V. Porter
 W. H. McElfatrick
 D'Oench & Yost
 Townsend, Steinle & Haskel
 J. Knox Taylor
 Reed & Stem
 Bruce Price and Warren & Davis
 H. Hale
 D'Oench & Yost
 Hoppin & Koen
 Wm. Barclay Parsons and S. L. F. Deyo
 Cass Gilbert
 Eng'r Dept. Docks & Ferries
 Howard Van Doren Shaw
 McKim, Mead & White
 McKim, Mead & White
 Carrere & Hastings
 Whitfield & King
 A. V. Porter
 A. W. Brunner
 H. H. Morgan
 Ernest Flagg
 Eric R.R. Engineer
 York & Sawyer



DISTRIBUTING YARD NO. 3

C. F. Shellenberger

Manufacturer of and Dealer in

Roofing Slate, Tile and Sewer Pipe

303 BUILDERS EXCHANGE
PHILADELPHIA, PA.

Both Telephones.

PRODUCTS—ROOFING SLATE, FACE BRICK, TILE AND SEWER PIPES

FACILITIES—We represent the "Akron" Roofing Tile for Eastern Pennsylvania and Southern New Jersey.

ROOFING SLATE—Peach Bottom Roofing Slate is absolutely unfading in color, tough and everlasting. It is not affected by climatic or chemical changes, and it will not disintegrate when subject to these conditions. Many government and prominent buildings of all classes throughout the country are covered with Peach Bottom Roofing Slate.

Keystone-Chapman Roofing Slate is hard, close-grained slate of superior quality, dark blue in color, and will not decompose or disintegrate.

Bangor, Albion Vein and Big Red Lehigh Slates are standard in color; are dependable in wearing qualities; are produced from the best quarries in the Bangor and Lehigh districts.

Lloyd's Unfading Green Slate of the Poultney, Vermont, district has no superior among the quarries; being the product of one quarry, it is uniform in color, tough in quality and is manufactured under such careful supervision that the superior characteristics of this material are developed to the highest degree possible. Red, Sea Green, Purple and Mottled Slates are desirable where a color scheme is to be carried out, and are tough and lasting.

FACE BRICK—Our supply of Face Brick is furnished by some of the largest factories in the country, and our lines are so varied and extensive that almost any taste can be satisfied. We can ship orders promptly either in large or small quantities, as our line covers brick for either interior or exterior work. This applies to brick for either purpose.

"A.B.C." SYSTEMS

ENAMELED BRICK—We represent the famous Tiffany Enameled Brick Company, whose product is the acknowledged leader of Enamel Brick. Various shapes, colors and sizes can be supplied at short notice. These bricks are suitable for either interior or exterior use. The variety of shades is so wide that almost any color scheme desired can be effectually produced.

AKRON ROOFING TILE—These tiles are made from the finest clay, which is especially adapted for the purpose of making the tile. They are thoroughly burned until vitrified, making them hard and durable, thus reducing the absorption of water to a minimum, and are practically free from lamination. They are fireproof, non-conductors of heat and cold, and will not crack, thereby preventing them from breaking and sliding from the roof.

The variety of designs in which these tiles are made provides for all styles of architecture where tile is used, and in colors to harmonize with the general color scheme. They may be adapted to any style of building or buildings, residences, offices, factories, etc. Any competent slate roofer can lay the "Akron" tile without difficulty, as it does not require any special experience.

SEWER PIPE AND FLUE LINING—Ohio River Sewer Pipe and Flue Lining is well known for its excellency of quality, being made from a clay that gives it a high degree of durability. The East Ohio Sewer Pipe Co., whose products we sell, have a large output and are capable of making prompt shipments of high-grade material.

PRICES AND DELIVERY—We will submit samples upon request and furnish prices, delivered to any shipping point.

Waldo Brothers

General Supply House for

Masons' Building Materials, Tools and Contractors' Supplies

45-49 BATTERYMARCH STREET

BOSTON, MASS.

Tudor Wharf
No. 1 Charles River Ave.
CHARLESTOWN

Yard
No. 58 Webster Ave.
SOMERVILLE

Waldo Wharf
No. 548 Albany St.
SOUTH END

Yard
On N. Y., N. H. & H. R. R.
PITTSBURGH ST.

MASONS' AND CONTRACTORS' SUPPLIES as follows:

Brick—FACE, MOLDED, GLAZED, VITRIFIED, HOLLOW, FIRE, IMPORTED, SAND-LIME. **Cement**—PORTLAND, ROSENDALE, SPECIAL, IMPORTED. **Plaster**—PATENT, INTERIOR AND EXTERIOR; HAIR PARTITION BLOCKS; "PYROBAR"; "SACKETT BOARD"; "BEAVER," AND "BISHOPRIC" WALL BOARDS

Terra Cotta—ORNAMENTAL, STRUCTURAL, CHIMNEY TOPS; FIRE-CLAY CHIMNEY PIPE; FLUE LININGS; VITRIFIED PIPE; WALL COPING; FIRE CLAY

Tile—FLOOR, WALL, FIREPLACE, ROOFING; MARBLE, FAIENCE, IMPORTED; MORTAR COLORS AND STAINS; WATERPROOFING COMPOUNDS; SHINGLES

FIREPLACE FITTINGS; WALL TIES AND PLUGS; METAL LATH; METAL CORNER BEADS; IRON SPECIALTIES; COAL CHUTES

"HARVARD STRETCHERS"—They are selected water-struck brick, have a rough texture, stand without deterioration in any climate and are tough and impervious. The color varies in each brick from bronze-green and dark blue on edges to cherry red in center. Average size about $7\frac{7}{8} \times 3\frac{1}{2} \times 2\frac{1}{4}$ inches; weight about 5 lbs.

Black Headers—A certain proportion of each burning consists of Arch Brick or Blue-Black Headers, often employed for bonding and producing effective contrast with the Stretchers.

Ten per cent. Black Headers without additional expense in every order of Harvard brick. Extra charge for more than 10%.

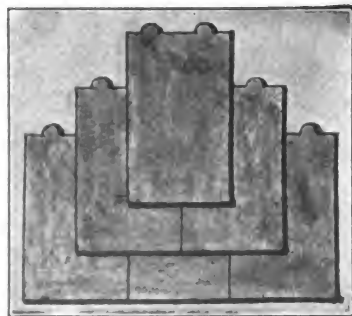
SPECIFICATIONS—FACING OUTSIDE WALLS—Waldo Brothers' Harvard Brick for walls.

PAVING FOR FLOORS—of all kinds. Waldo Brothers' Harvard Brick for paving (on flat) or (on edge).

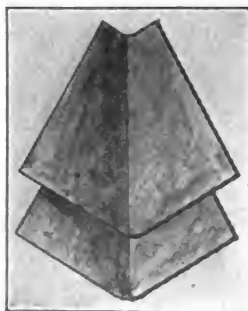
FIREPLACES—Waldo Brothers' specially-selected "Harvard" Brick for fireplace facings.

"PERFECTA" NO. 1 ROOFING TILE—We make a specialty of Imported English Roofing Tile known as Peake's "Perfecta" No. 1, in varying plain red colors, and also in Hand-made, Plastic and Sanded-face style. These tiles have a rich red color not produced in Domestic Makes, the sanded-face tile giving the long-sought rough effect.

We also carry Domestic Makes of all patterns and colors. Estimates furnished for tile laid on roof.



"PERFECTA" NO. 1 TILE



HIP TILE

SPECIAL FLOOR TILE—Waldo Brothers' Imported English "Perfecta" Floor Tiles, made especially for us, in $6 \times 6 \times \frac{1}{2}$ inch

"A.B.C." SYSTEMS

and $6 \times 9 \times \frac{1}{2}$ inch sizes, are very different from any other tiles manufactured here or abroad, having a deep rich red color, true surfaces and clean sharp edges.

CHIMNEY TOPS—Our tops are carefully proportioned and, being made of red terra cotta to match the brickwork, give a pleasing finish to the chimney.

They are made to throw up any transverse current of wind and thereby improve the draft and prevent smoke and soot blowing down the chimney.

They are easily applied to any chimney and, unlike the metal tops, do not rust out.

We always carry a large stock of the different sizes of tops at our Boston storehouse and can make prompt shipment.



NOS. 1, 2 AND 3
2, $2\frac{1}{2}$ and 3 ft. high,
13-in. base



NO. 24
 $2\frac{1}{2}$, 3 and 3 ft. 5 in.
high, 10 x 14-in. base



NOS. 4, 5 AND 6
2, $2\frac{1}{2}$ and 3 ft. high,
10 x 14-in. base



NO. 25
3 ft. and 3 ft. 9 in.
high, 10 x 14-in. base



NO. 26
2 ft. 9 in. high,
10½ in. base
3 ft. 3 in. high,
13 in. base

No.	PRICE LIST
1, 2 ft. 0 in. high, 13 in. base.....	\$4.00
2, 2 ft. 6 in. high, 13 in. base.....	4.50
3, 3 ft. 0 in. high, 13 in. base.....	5.75
4, 2 ft. 0 in. high, 10x14 in. base.....	4.25
5, 2 ft. 6 in. high, 10x14 in. base.....	5.00
6, 3 ft. 0 in. high, 10x14 in. base.....	6.00
7, 2 ft. 9 in. high, 10½ in. base.....	5.00
8, 3 ft. 3 in. high, 13 in. base.....	5.50
9, 2 ft. 6 in. high, 14 in. base.....	5.00
10, 6 in. x 10 in. flange.....	2.00
11, 6 in. and 8 in. diameter.....	2.00
12, 4 ft. 6 in. high, 14x14 in. base.....	9.00
13, 1 ft. 0 in. high, 10½x14 in. base.....	3.00
14, 2 ft. 0 in. high, 13 in. base.....	3.75
23, 2 ft. 6 in. high, 10x14 in. base.....	5.50
23, 3 ft. 0 in. high, 10x14 in. base.....	6.00
23, 2 ft. 6 in. high, 14x14 in. base.....	6.50
23, 3 ft. 0 in. high, 14x14 in. base.....	7.00
24, 2 ft. 6 in. high, 10x14 in. base.....	5.50
24, 3 ft. 0 in. high, 10x14 in. base.....	6.50
24, 3 ft. 5 in. high, 10x14 in. base.....	7.50
24, 2 ft. 6 in. high, 14x14 in. base.....	6.50
24, 3 ft. 0 in. high, 14x14 in. base.....	7.50
24, 3 ft. 5 in. high, 14x14 in. base.....	8.50
25, 3 ft. 0 in. high, 10x14 in. base.....	6.50
25, 3 ft. 9 in. high, 10x14 in. base.....	7.50
25, 3 ft. 0 in. high, 14x14 in. base.....	7.50
25, 3 ft. 9 in. high, 14x14 in. base.....	8.50
26, 3 ft. 3 in. high, 13 in. base.....	6.50
26, 2 ft. 9 in. high, 10½ in. base.....	6.00
28, 2 ft. 0 in. high, 14x14 in. base.....	7.00
29, 2 ft. 0 in. high, 10x14 in. base.....	6.00
30, 2 ft. 0 in. high, 13 in. base.....	6.00

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30
Colnik Mfg. Co., C. Milwaukee, Wis.		7 9	11		21 22	Kansas City Structural Steel Co. Kansas City, Mo.		7 9	11			Rieseck, P. Pittsburgh, Pa.		7 9	11		21 22
Columbia Iron & Wire Works Co. Canton, Ohio		7 9	11		21 23	Kansas City Wire & Iron Works Kansas City, Mo.		7 9	11		23	Riter-Conley Mfg. Co. Pittsburgh, Pa.		7 9	11		
Davenport Machine & Foundry Co. Davenport, Iowa		7 9	11		23	Kellogg Structural Co., George Buffalo, N. Y.	5	6 7 9	11			Riverside Bridge Co. Martins Ferry, Ohio		7 9	11		
Dearborn Foundry Co. Chicago, Ill.		7 9	11		21	Kleeman Mfg. Co., L. F. Kansas City, Mo.		7 9	11		21 23	Roanoke Iron Works, Inc. Roanoke, Va.		7 9	11		21 23
Decatur Bridge Co. Decatur, Ill.		7 9	11			Kratzer & Co. Pittsburgh, Pa.		7 9	11			Rochester Bridge Co. Rochester, Ind.	5	7 8 9	11		23
Dietrich Bros. Baltimore, Md.		7 9	11		23	Lackawanna Bridge Co. Buffalo, N. Y.		7 9	11			Rudgear-Merle Co. San Francisco, Cal.		7 9	11		21 23
Dimond, Thomas New York, N. Y.		7 9	11		21	Lackawanna Steel Co. New York, N. Y.		6 7 9	11		24	Sessions Foundry Co. Bristol, Conn.	5				22
Dover Boiler Works Dover, N. J.		7 9	11		23	Lauer & Harper Co. Baltimore, Md.		7 9	11			Shorthill Co., A. E. Marshalltown, Iowa		7 9	11		21 23
Duplex Hanger Co. Cleveland, Ohio	5	6				Lawrence Iron & Steel Foundry Co. Pittsburgh, Pa.		7 9				Smith & Lovett Co. Boston, Mass.		7 9	11		21 23
Eagle Iron Works Brooklyn, N. Y.		7 9	11		21 23	Love Bros. Aurora, Ill.	5	6 7 9			21 22 23 24	Snead & Co. Iron Works, Inc. Jersey City, N. J.		7 9	11		21 23
Eastern Bridge & Structural Co. Worcester, Mass.		7 9	11		21 23	McClintic - Marshall Con- struction Co. Pittsburgh, Pa.		7 9	11			South Bend Foundry Co. South Bend, Ind.		7 9	11		
Eastern Steel Co. Pottsville, Pa.		7 9				McKeesport Steel Construc- tion Co. McKeesport, Pa.		7 9				South Florida Foundry & Machine Works Orlando, Fla.		7 9	11		
Faitoute Iron & Steel Co. Newark, N. J.	5	6 7 9				McLauthlin Co., Geo. T. Boston, Mass.		7 9	11		21 23	Steel Roof Truss Co. St. Louis, Mo.		7 9	11		21 23
Fargo Foundry Co. Fargo, N. Dak.		7 9	11		21 23	McMyler Interstate Co. Bedford, Ohio		7 9	11			Steward & Stevens Iron Works Philadelphia, Pa.		7 9	11		21 23
Feine, August Buffalo, N. Y.		7 9	11		21 23	Mackensie's Sons Co., Dun- can Trenton, N. J.	5	7 9				St. Paul Foundry Co. St. Paul, Minn.		7 9	11		21 23
Fletcher & Crowell Co. Portland, Me.		7 9	11		21 23	Mack Iron & Wire Works Co. Sandusky, Ohio		7 9	11		21 22	Thatcher Parker Terre Haute, Ind.	5	6 7 9	11		
Folsom Mfg. Co., C. G. South Bend, Ind.		7 9	11		23	Mahony Mfg. Co. Troy, N. Y.		7 9	11		21 23	Thompson, Hervey New York, N. Y.		7 9	11		21 23
Forest City Steel & Iron Co. Cleveland, Ohio		7 9			21 23	Mequier & Jones Co. Portland, Me.		7 9	11		21 23	Tuerck, I. K. Portland, Ore.		7 9	11		21 23
Gehret Bros. Bridgeport, Pa.	5	6 7 9	11		21 22 23	Merritt & Co. Camden, N. J.	5	6 7 9	11			Union Foundry & Machine Co. Rockford, Ill.		7 9	11		
Grainger & Co. Louisville, Ky.		7 9	11		21 23	Mesker & Co., Geo. L. Evansville, Ind.	5	6 7 9			21 22 23	Union Foundry Works Chicago, Ill.		7 9	11		21 23
Harman & Hassert Bloomington, Pa.	5	7 9	11		21 23	Meyer's Mfg. Co., F. J. Hamilton, Ohio		7 9	11		21 23	Union Iron & Foundry Co. St. Louis, Mo.		7 9	11		21 22
Hartwell Iron Works Houston, Tex.		7 9	11		21 23	Minneapolis Steel & Machine Co. Minneapolis, Minn.		7 9	11			Union Iron Works, Inc. Houston, Tex.		7 9	11		21 23
Herzog Iron Works St. Paul, Minn.		7 9	11		21 23	Mississippi Foundry & Ma- chine Co. Jackson, Miss.		7 9	11		21 23	Union Metal Mfg. Co. Canton, Ohio	5	7 9	11		21
Hetherington & Berner Indianapolis, Ind.	5	6 7 9	11		21 23	Murray Iron Works Co. Burlington, Iowa		7 9	11		21 23	U. S. Column Co. Cambridge, Mass.	5	7 9	11		
Hewitt Foundry Co., John Newark, N. J.		7 9	11		21	National Column Co. Brooklyn, N. Y.		7 9	11			U. S. Steel Corporation New York, N. Y.		7 9	11		
Hunter Machine Co., James North Adams, Mass.	5					Niver Iron Works Co. Muscatine, Iowa		7 9	11			Valley Iron Works St. Paul, Minn.		7 9	11		21
Indiana Bridge Co. Muncie, Ind.		7 9	11			Noelke-Richards Iron Works Indianapolis, Ind.	5	6 7 9	11		21 23	Van Zandt - Moore Iron Works Fort Worth, Tex.		7 9	11		21 23
Inland Steel Co. Chicago, Ill.		7 9				Pan American Bridge Co. Newcastle, Ind.		7 9	11		21 22 23	Vierling Steel Works Chicago, Ill.		7 9	11		21 23
International Steel & Iron Const. Co. Evansville, Ind.		7 9	11		21 23	Patterson Foundry & Ma- chine Co. East Liverpool, Ohio	5					Vincennes Bridge Co. Vincennes, Ind.		7 9	11		
Irwin Mfg. Co., Thos. W. Pittsburgh, Pa.		7 9				Paxton & Vierling Iron Works Omaha, Neb.		7 9	11		21 23	Virginia Bridge & Iron Co. Roanoke, Va.		7 9	11		
Jones & Laughlin Co. Pittsburgh, Pa.		7 9	11		21 22	Penn Bridge Co. Beaver Falls, Pa.		7 9	11			Voggenthaler Co., E. J. Dubuque, Iowa		7 9	11		23
Jones Iron Works, A. F. Washington, D. C.		7 9				Pennsylvania Steel Co. Steelton, Pa.	5	6 7 9	11			Wagner, A. F. Milwaukee, Wis.		7 9	11		21 23
Kalamasoo Foundry & Ma- chine Co. Kalamasoo, Mich.		7 9	11			Phoenix Iron Co. Philadelphia, Pa.		7 9				Wallace Machine & Foundry Co. Lafayette, Ind.	5	6 7			
						Post & McCord New York, N. Y.		7 9				Zimmerman, Chas. E. Syracuse, N. Y.	5				
						Republic Iron & Steel Co. Youngstown, Ohio		7 9									

CLASSIFICATION PAGE OF
SECTION 15

Architectural and Ornamental Iron and Bronze

(Builders' Iron Work see Section 18)
(Structural Steel and Iron see Section 14)

Section Synopsis

A. CAST AND WROUGHT WORK. Fronts, Show Windows, Stairs; Elevator Cars, Doors, Enclosures, etc.; Balustrades, Railings; Crestings, Finials, and Weathervanes; Grilles, Fencing, Doors, Gates, Windows, Trim; Fireplaces; Drying Frames; Window Guards; Marquees; Tablets, Mausoleum Work; Fountains, ornamental, drinking; Statuary, Lamp Posts, Garden Furniture, Fixtures, etc., in iron, bronze, brass and other metals
B. Rolled-metal Sash and Frames; Rolled-steel Case-

ment Windows; Rolled-steel bar Skylights, and Sash Operators

C. Cast-iron Pipe for drainage and water supply; Cast Specialties and Sundries; Cast Flue Linings, Chimney Tops, etc.

D. WIRE WORK AND EXPANDED METAL PRODUCTS. Materials, Cloth, Netting; Fencing, Railings, Gates; Garden Furniture; Bank Cages; Bins, Wine Racks, etc., Door Mats; Signs; Window Guards

E. PRISM-GLASS AND IRON-FRAME LIGHTS. Cast-iron Frame and Reinforced-concrete Pavement Lights, Floor Lights; Prism-Glass and Iron-frame Skylights; Trap Doors, Window Lights, Canopy Lights; Prism Glass Store Lighting; Pressed, Sheet and Cast Prism Glass of all varieties

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX		REGULAR CLASSIFICATION	
A	Architectural (general) and ornamental work, in iron, bronze and other metals, <i>cast, wrought, as follows:</i> —		
	1 Banks interiors, fixtures, screens, railings, etc.		
	2 Bronze doors, tablets, statuary, fittings, etc., for mausoleum work		
	3 Fencing, railings, gates, lanterns, grilles, etc.		
	4 Fire escapes, drying frames, window guards, signs, etc.		
	5 Folding gates, in all metals, patent design		
	6 Fountains, lamp posts, garden vases, etc.		
	7 Fronts, baywindows, show-windows; elevator cars, doors, enclosures; marquees, roof trimmings, stairs, doors, shutters, windows, cornices, trim, mantels, etc.		
	8 Iron arbors, aviaries, pens, espaliers, trellises, etc.		
	9 Light structural steel and iron work		
	Moldings:—		
	10 Cast-metal		
	11 Rolled-metal		
	12 Special-process		
	13 Wrought-metal		
	14 Pipe railings, iron, brass, bronze		
	15 Pressed-metal columns, patent		
	16 Prison cells and station lockups		
	17 Registers, for heating and ventilation		
	18 Sidewalk doors, gratings, fire doors, etc.		
	19 Steel flag poles		
	20 Steel door mats		
	21 Turnstiles, ticket offices, etc.		
		22	Wrought-iron and bronze grilles, candelabra, lighting fixtures, door knockers, etc., art work
		B	35 Rolled-metal sash and frames 36 Rolled-steel bar skylights 37 Rolled-steel casement windows 38 Sash operators, skylight turrets
		C	45 Cast-iron pipe and fittings, water supply, drainage Cast sundries and specialties:— 46 Flue linings, chimney tops 47 Coal-hole covers 48 Coping 49 Manhole and catchbasin frames and covers
		D	Wire and expanded-metal work:— 56 Bank and office enclosures, cages 57 Bins and racks, package, wine, etc. 58 Door mats 59 Garden furniture 60 Non-climbable fences 61 Signs, frames, tree guards, etc. 62 Tennis court enclosures, poultry runs, etc. 63 Window guards, grilles, etc. 64 Wire fencing, railings, and gates, etc.
		E	72 Prism glass, pressed tiles, sheet prism, wired prism, cast prismatic lenses Prism-glass lights, cast-iron frame, rolled steel frame, reinforced concrete:— 73 Pavement lights, floor lights, skylights, canopies, trap doors, etc. 74 Prismatic window lights, steel frame, copper frame, and store lighting 75 Transom ventilators, prism lights
SPECIAL CLASSIFICATION			
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.			
	81	Architectural sheet-metal work, roofing, skylights, ventilators, etc. (S. 16 B & C)	
	82	Builders' ironwork and structural hardware (S. 18)	
	83	Chandeliers, lamps, etc. (S. 42)	
	84	Church furnishings and fine fixtures (S. 43 B)	
	85	Clocks, sun dials, etc. (S. 34 C)	
	86	Fireplace work, linings, grates, fenders, etc. (S. 41)	
	87	Fire escapes, iron, special design, (S. 17 B)	
	88	Stable, abattoir and garage fittings (S. 37)	
	89	Structural steel and iron (S. 14)	
	90	Wire screens and doors (S. 21 F)	
TRADE NAMES AND BRANDS			
"Bostwick," folding gates and guards "Composite," folding gates and guards "Novelty," folding gates and guards "Pitt," folding gates and guards "Cinmanco," fly screens, garden and lawn fences, etc., Catalog A 7 "Ellwood," non-climbable fence "New Ideal," lawn wire fence "Hercules," sash-operating device "Keepsdry," skylight construction			
			Catalog A 8
			Catalog A 9
			Catalog B 1

"Luxfer," prism glass, for pavement lights, skylights and floor lights, Catalog E 2					
"Multiple Unit," skylight construction, Catalog B 2					
"Paschall," system of pavement light, skylights and floor lights					Catalog E 1
"3-Way," prism glass, for pavement lights, skylights and floor lights					

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
E 2	American Luxfer Prism Co. Chicago, Ill.	9			72 73 74 75	
E 1	American 3-Way Prism Co. Chicago, Ill.	9			72 73 74 75	
A 5	Anchor Post Iron Works New York, N. Y.	3 8		59 60	61 62 63 64	
A 4	Carpenter Co., F. E. New York, N. Y.	3 8 14 16		56 59 60	61 62 63 64	88
A 7	Cincinnati Mfg. Co. Cincinnati, Ohio	1 2 3 5 6 7 8 9 10 14	22	56 59	61 62 63 64	82 88 90
A 9	Enterprise Foundry & Fence Co. Indianapolis, Ind. and American Fence Construction Co. New York, N. Y.	3 8		59 60	61 62 63 64	
A 1	Gorham Co., The New York, N. Y.	1 2 3 6 7 10	22			
B 1	Keepsdry Construction Co. New York, N. Y.	3 7 9	35 36 38			81
B 2	National Ventilating Co. New York, N. Y.	9	35 36 38			
A 8	Pitt Composite Iron Works, The Wm. R. New York, N. Y.	1 2 3 5 7 9 14	22	56 59	61 63 64	86 88
A 6	Schreiber & Sons Co., The L. Cincinnati, O.	1 2 3 4 6 7 9 10 14 16 18	22 35 37	46 47 49		73 89

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
A 2	Standard Company, The Chicago, Ill.	1 2 3 6 7 10	22			
A 3	Tiffany Studios New York, N. Y.	1 2 3 6 7 10	22			

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.

Canton Foundry & Machine Co., The S. 37, Cat. 1 (Manhole frames and covers, sidewalk doors, area gratings, coal hole covers)	Des Moines Bridge & Iron Co. S. 35 F, Cat. 4 (Architectural iron, flag poles, fire escapes)	Duvinage, Pierre, S. 18, Cat. 1 (Architectural iron and wire work) (Steel fire doors and shutters)	Follansbee Brothers Co S. 16 A, Cat. 5 (Solid-drawn brass thresholds)	Hewes & Phillips Iron Works S. 28 B, Cat. 1 (Heavy iron and brass castings)	McClave-Brooks Co. S. 28 A, Cat. 5 (Heavy iron and brass castings)	Variety Manufacturing Co. S. 17 A, Cat. 3 (Sidewalk doors, wrought iron work)	Vonnegut Hardware Co. S. 17 B, Cat. 1 (Steel and iron goods)	Wade Iron & Sanitary Mfg. Co. S. 10 D, Cat. 2 (Cast iron and steel)
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Manufacturers without Catalog data		Sub-Index Numbers				
		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
Ahrens Iron Works..... Cincinnati, Ohio	3 7	22	56	63		
Albree Iron Works Co., Chester B. Allegheny, Pa.	3 19					
Albuquerque Foundry & Machine Works Albuquerque, N. Mex.	3					82 89
Adlerhurst Iron Co..... New Haven, Conn.	1 3		56 57			82 87 89
American Abrasive Metals Co. New York, N. Y.				47	73	
American Bar Lock Co..... Philadelphia, Pa.	18				73	
American Forge & Iron Co. New York, N. Y.	3 7	22				
American Foundry & Mfg. Co. St. Louis, Mo.	6		45 46			88
American Iron & Wire Works Chicago, Ill.	2	22				
American Mason Safety Tread Co. Boston, Mass.	20				72 73	82 89
American Steel & Ornamental Iron Works Minneapolis, Minn.	1 2 5	22				83 87
American Wire Form Co..... New York, N. Y.	3 6 20		50		61 63 64	
Amos & Co., Chas..... Detroit, Mich.	2 3	22 37			64	
Atlas Foundry Machine Co.. Tacoma, Wash.			45 46 47	73		
Baizley Iron Works, John... Philadelphia, Pa.	3 19	22	45	63	64	82 89
Banner Iron Works..... St. Louis, Mo.	3		45 46	63		82 89
Barbee Wire & Iron Works.. Chicago, Ill.	3 6 16 20	22	56	61	64	87 88
Battaglia Electric Fountain Co. New York, N. Y.	6					
Bayer-Gardner-Himes Co... New York, N. Y.	2					
Bayley Co., Wm..... Springfield, Ohio	1 3 7	22 35				89
Belmont Iron Works..... Philadelphia, Pa.	3 7 16	22			64	82 89
Berger Mfg. Co..... Canton, Ohio				72 73 74 75		
Bigelow Wire Works, Cheney Springfield, Mass.	3 7	22	56	63 64		
Biggin Co., Chas. P..... Philadelphia, Pa.	2 3 7 16 19		56	64		82 89
Blum & Co., Julius..... New York, N. Y.	9 11 13					
Bolles Iron & Wire Works J. E. Detroit, Mich.	1 2 3 4		56	63 64		
Bradley & Hubbard Mfg. Co. Meriden, Conn.	3 7	22	56	63		87 89
Braun, J. G..... Chicago, Ill.	9 11 13					
Bromwell Brush & Wire Goods Co. Cincinnati, Ohio			56			84

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
Brook & Seaman..... New York, N. Y.	3			62 64		Crane Co..... Chicago, Ill.			45 49			Grainger & Co..... Louisville, Ky.	1 3 7 19		46 59	63	89
Brooklyn Vault Light Co.... Brooklyn, N. Y.				72 73 74		Creswell Iron Works, S. J.... Philadelphia, Pa.	1 2 3 6 7 9	47	64	82		Hanke Iron & Wire Works..... Chicago, Ill.	3 7 19	22	56	64	82
Brown Bros. Mfg. Co..... Chicago, Ill.	1 2 3 4 5 6 7 19	22		73		Danville Foundry & Machine Co. Danville, Pa.	3 6 7	22	46			Hartwell Iron Works..... Houston, Tex.	4		45	63	89
Bruner Granitoid Co., P. M. St. Louis, Mo.				73		Darby & Sons Co., E., Inc.... Philadelphia, Pa.	3		56	63	88	Heath-Johnson Co..... Chicago, Ill.	1 2 3 6 7	22			
Buffalo Wire Works Co., Inc. Buffalo, N. Y.			56 59	63 64		Davenport Machine & Foundry Co. Davenport, Iowa	3 4 6 19	22	46 56			Hecla Iron Works..... Brooklyn, N. Y.	1 2 3 5 6 7	22			
Bureau Bros..... Philadelphia, Pa.	1 2 3 5 6 7 7	22				Detroit Steel Products Co.... Detroit, Mich.		35 38				Henry-Bonnard Bronze Co.. Mt. Vernon, N. Y.	1 2 3 6 7	22			
Butler Street Foundry & Iron Co. Chicago, Ill.	3 3 7					Detroit Wire & Iron Works.. Detroit, Mich.	2 3 6	22	56 57 59	64	87 88	Herzog Iron Works..... St. Paul, Minn.	2 3 7 19	22	56		89
Cabaret & Co., Paul E..... New York, N. Y.	1 2	22				Diebold Safe & Lock Co..... Canton, Ohio	16					Hope & Sons, Henry..... New York, N. Y.		37			
Cambridge Glass Co..... Cambridge, Ohio				72 73 74		Dietrich Bros..... Baltimore, Md.	3	22	56	63	87	Howard & Morse..... New York, N. Y.	3 16 19	22	56	63 64	
Camden Iron Works..... Salem, Va.	3 7 16	22		72 82	89	Dimond, Thomas..... New York, N. Y.	3 4	22	56	63	89	Hub Wire Cloth & Wire Work Co. Boston, Mass.			56 58	63 64	
Carr & Co., Stuart R..... Baltimore, Md.	7		46		82	Dover Boiler Works..... Dover, N. J.	3 19					Illinois Malleable Iron Co.. Chicago, Ill.	3		45		
Carthage Foundry & Ma- chine Works Carthage, Mo.	3 6 7			82 87 89		Downs, J. H..... New York, N. Y.			60	62 64		International Steel & Iron Const. Co Evansville, Ind.	3 7 16 19	35 36	46 56 59	63 64	82 89
Cary Mfg. Co..... New York, N. Y.	20					Dow Wire & Iron Works.... Louisville, Ky.	3 6 7 19	22	56 59	63 64	88	Jackson Co. William H.. New York, N. Y.	1 2 3 6 7	22			86
Chattanooga Iron & Wire Works Chattanooga, Tenn.	3 7 16	22	56	63	87	Draper & Ringrose..... New York, N. Y.		37				Jones & Co., L. E..... Baltimore, Md.	7			63	
Chesapeake Iron Works..... Baltimore, Md.	1 2 3 19	22	56 57	63 89	82	Drouve Co., G..... Bridgeport, Conn.		36 38				Jorss Iron Works, A. F..... Washington, D. C.	3 7	22		63	
Chicago Hardware Foundry Co. N. Chicago, Ill.	2 3 7		56 59			Eagle Iron Works..... Brooklyn, N. Y.	3 16 19	22	56 57	64	88 89	Kansas City Wire and Iron Works Kansas City, Mo.	3 6 16 19	22	56 59	64	87 89
Chicago Ornamental Iron Co. Chicago, Ill.	2 3 7 19	22	56	63 64 73 74		Eastern Bridge & Structural Co. Worcester, Mass.	3 7 16 19					Kathodion Bronze Works.. New York, N. Y.	1 2 3 6 7	22			
Chicago Sidewalk Light Co. Chicago, Ill.				72 73	89	Enterprise Wire & Iron Works, Inc. Baltimore, Md.	1		56	63	87	Kellogg Iron Works..... Buffalo, N. Y.	4 7			63 73	82 89
Chickasaw Iron Works..... Memphis, Tenn.	3 7			72	89	Estey Wire Works Co..... New York, N. Y.	3 7	22	56	64		Kleeman Mfg. Co. L. F. Kansas City, Mo.	2 3	22	56 59	64	
Christopher & Simpson Ar- ch'l Iron & Foundry Co.. St. Louis, Mo.	3 19	22	46	63 72 73	82 89	Fargo Foundry Co..... Fargo, N. D.	3 7 16 19	22	45 46	63		Kramer Bros. Foundry Co.. Dayton, Ohio	6		46 49		
Cincinnati Iron Fence Co. Cincinnati, Ohio	3 8		56 59	61 64		Federal Brass & Bronze Co.. Astoria, N. Y.	2 6 7	22	56			Ledig Sons, Rothchild IG Philadelphia, Pa.					
City Foundry Co..... Cleveland, Ohio			45 46			Feine, August..... Buffalo, N. Y.	3 7	22				Loeffelholz Co. Milwaukee, Wis.	2 7	22	56		
Cleveland Art Metal Co.. Cleveland, Ohio	3 7	22		63		Fiske Iron Works, J. W..... New York, N. Y.	1 2 3 6 7 10	22				Love Bros. Iron Aurora, Ill.	2 3 6 7 19	22	45 46 56	63 86 88	
Coe Brass Mfg. Co..... Ansonia, Conn.	12					Fletcher & Crowell Co..... Portland, Me.	1 3 6 7 10	22				Lowthw. Safford Wire Co.. St. Louis, Mo.			56	63 64	
Colnik Mfg. Co. C..... Milwaukee, Wis.	2 3 19	22	56	63 64	82 89	Flour City Ornamental Iron Works Minneapolis, Minn.	1 2 3 6	22				Luster S. Co. Inc. Philadelphia, Pa.			45 56		
Columbia Iron & Wire Works Canton, Ohio	3	22	56	64	82 89	Fox & Co., John..... New York, N. Y.			45			McCarly Co., Boston Philadelphia, Pa.	19				
Columbus Wire & Iron Works Columbus, Ohio	7			63 64		Frankel Display Fixture Co.. New York, N. Y.				63 64		McKenney Bros. Iron Co.. Pittsburgh, Pa.		22		63 64	
Conant Co. Chicago, Ill.				63		Garry Iron & Steel Co..... Niles, Ohio						McKenney Bros. Iron Co.. Pittsburgh, Pa.		22	56	63 64 73	
Connecticut Steel & Wire Co. Hartford, Conn.	3	22		64		Gehret Bros..... Bridgeport, Pa.	9		40	64	87	Mary Iron & Wire Works St. Louis, Mo.	3	22	56 59	63 64	88
Coyle Iron Works, H. B., Inc. Philadelphia, Pa.	4		57	63		Griffoul & Bros. Co., A.... Newark, N. J.								22	46	63	

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
Maltby & Co., G. K. New York, N. Y.				72		Remppis Co., Wm. F. Reading, Pa.	1 2 3 6 7	22				Texas Anchor Fence Co. Fort Worth, Tex.	3 16		56 58	63 64	
Manhattan Brass Co. New York, N. Y.	2 3 6 7	22 35	56	63 64	86	Richards & Kelly Mfg. Co. Chicago, Ill.			47	73 74		Thompson, Harvey. New York, N. Y.	3 7	22	56	63 64	
Manly Jail Works. Dalton, Ga.	16					Richey, Browne & Donald, Inc. Maspeth, N. Y.	2 3 7	22	56	63	82	Titchener & Co., E. H. Binghamton, N. Y.	3 7 19	22	56	63 64	87 88
Megquier & Jones Co. Portland, Me.	3 7		56	63 64 73		Rieseck, P. Pittsburgh, Pa.	3 19			63	82 89	Trussed Concrete Steel Co. Detroit, Mich.		35 38			
Merritt & Co. Camden, N. J.				79 80		Roanoke Iron Works, Inc. Roanoke, Va.	3 7 19	22	46	63	86 88 89	Tucker & Vinton. New York, N. Y.				73	
Mesker & Co., Geo. L. Evansville, Ind.	4			63 64		Rodefer Glass Co. Bellaire, Ohio				72 73 74		Tuerck, I. K. Portland, Ore.	2 3 7 16 19		56	63 64	86
Meyer's Mfg. Co., F. I. Hamilton, Ohio	3 7	22	56 64		89	Rudgegear-Merle Co. San Francisco, Cal.	2 3 7 19	22	56	64	89	Tuttle & Bailey Mfg. Co. New York, N. Y.	17	22			
Midland Metal Co., Inc. Philadelphia, Pa.	1 2 3 6 7	22				St. Louis Wire & Iron Co. St. Louis, Mo.	2 3 7 19	21	56	63 64		Tyler Co., W. S. Cleveland, Ohio	1 2 3 4 7				83
Mullins Co., W. H. Salem, Ohio	2 3 11				81	St. Paul Foundry Co. St. Paul, Minn.	16 19		46	63 64		Union Foundry Works. Chicago, Ill.	1 2 3 6 7	22			
Murray Iron Works Co. Burlington, Ohio	3 6 7				89	Schalkenbach & Budke. Jersey City, N. J.		35 36 38				Union Iron & Foundry Co. St. Louis, Mo.	3 6 7 16	22	46	63 64 73	81 82 87 89
Nash, Caleb. Mt. Vernon, N. Y.	3		56	64		Shorthill Co., A. E. Marshalltown, Iowa	3 7 11 19		45 46	63 72 73	82 89	Union Iron Works, Inc. Houston, Tex.	3 7 19	22	46	63 72	82 87
National Steel Products Co. Philadelphia, Pa.		35 37				Sleeth Mfg. Co. Belleville, N. J.	3 20					Union Metal Mfg. Co. Canton, Ohio	6				
New York Metalizing Co. Brooklyn, N. Y.	1 2 3 6 7	22				Smith & Co., Edw. F. New Haven, Conn.			56	63 64		United States Metal Prod- ucts Co. New York, N. Y.	2 7	22			
New York Prism Co. New York, N. Y.				72 73		Smith & Lovett Co. Boston, Mass.	2 3 7 16			64	82	Upham & Co., H. H. New York, N. Y.	2			61	
Noelke-Richards Iron Works Indianapolis, Ind.	2 3 7 19	22	56	63	89	Smith Wire & Iron Works. F. P. Chicago, Ill.	1 2 3 4 5 6 7 18	22	47 49 56 57 59	63 64	88	Up-to-Date Mfg. Co. Terre Haute, Ind.	3		56 58	63 64	87
Page Woven Wire Fence Co. Adrian, Mich.				62 64		Smyser-Royer Co. Baltimore, Md.	1 2 3 6 7	22				Valley Iron Works. St. Paul, Minn.	7		46		82 88
Pauly Jail Building Co. St. Louis, Mo.	16					Snead & Co. Iron Works, Inc. Jersey City, N. J.	1 2 3 6 7	22	56	63		Van Zandt - Moore Iron Works Fort Worth, Tex.	3 7 19	22		63	87 89
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Perkins Mfg. Co. St. Paul, Minn.	3 4 19	22		64	88	Solar Prism Co. Cleveland, Ohio				72 73 74 75		Voggenthaler Co., E. J. Dubuque, Iowa	3 4 16 19	22		63	82 89
Pettit, Frank. Philadelphia, Pa.	3			63 64		South Florida Foundry & Machine Works Orlando, Fla.	3 7	22		63		Vulcan Co. Detroit, Mich.	2 3 7	22	56	63 64	87
Philadelphia Bronze Works Philadelphia, Pa.	1 2 3 6 7	22				Spokane Ornamental Iron & Wire Works Spokane, Wash.	2 3 6 7	22	56	63 64		Wagner, A. F. Milwaukee, Wis.	3 7 11 19	22		63	89
Phoenix Steel Construction Co. Pittsburgh, Pa.	3 19					Steward & Stevens Iron Works Philadelphia, Pa.	3 7 16	22	56	63 72	88	Wayne Iron Works. Philadelphia, Pa.	3			63 64	
Pirkel Iron Works, John Brooklyn, N. Y.	1 2 3 6 7	22				Stewart Iron Works Co. Channahon, Ill.	3 7 16	22	56	63 64	88	Wheaton Brass Works, A. W. Newark, N. J.	3				
Pittsburgh Brass Mfg. Co. Pittsburgh, Pa.						Stewart Foundry & Machine Works New York, N. Y.	3 7 16	22	56	63 64	88	White Co., Oliver. Boston, Mass.	3	22	56	63 64	
Polachek Bronze & Iron Co. Long Island City, N. Y.	3 7 16	22				Stewart Foundry & Machine Works New York, N. Y.	3 7 16	22	56	63 64	88	Williams, John, Inc. New York, N. Y.	1 2 3 5 6 7	22			
Pressed Prism Plate Glass Co. Morgantown, W. Va.				72		Stewart Foundry & Machine Works New York, N. Y.	3 7 16	22	56	63 64	88	Winslow Bros. Co. Chicago, Ill.	1 2 3 5 6 7 10	22			
Queen City Wire Works Buffalo, N. Y.			56	64		Stewart Foundry & Machine Works New York, N. Y.	3 7 16	22	56	63 64	88	Wright Wire Co. Worcester, Mass.			56	61 62 63 64	85
Radley Steel Construction Co. New York, N. Y.						Stewart Foundry & Machine Works New York, N. Y.	3 7 16	22	56	63 64	88	Zeman Iron Works Co. Cleveland, Ohio	3 6 7 19	22	56	63 64	87

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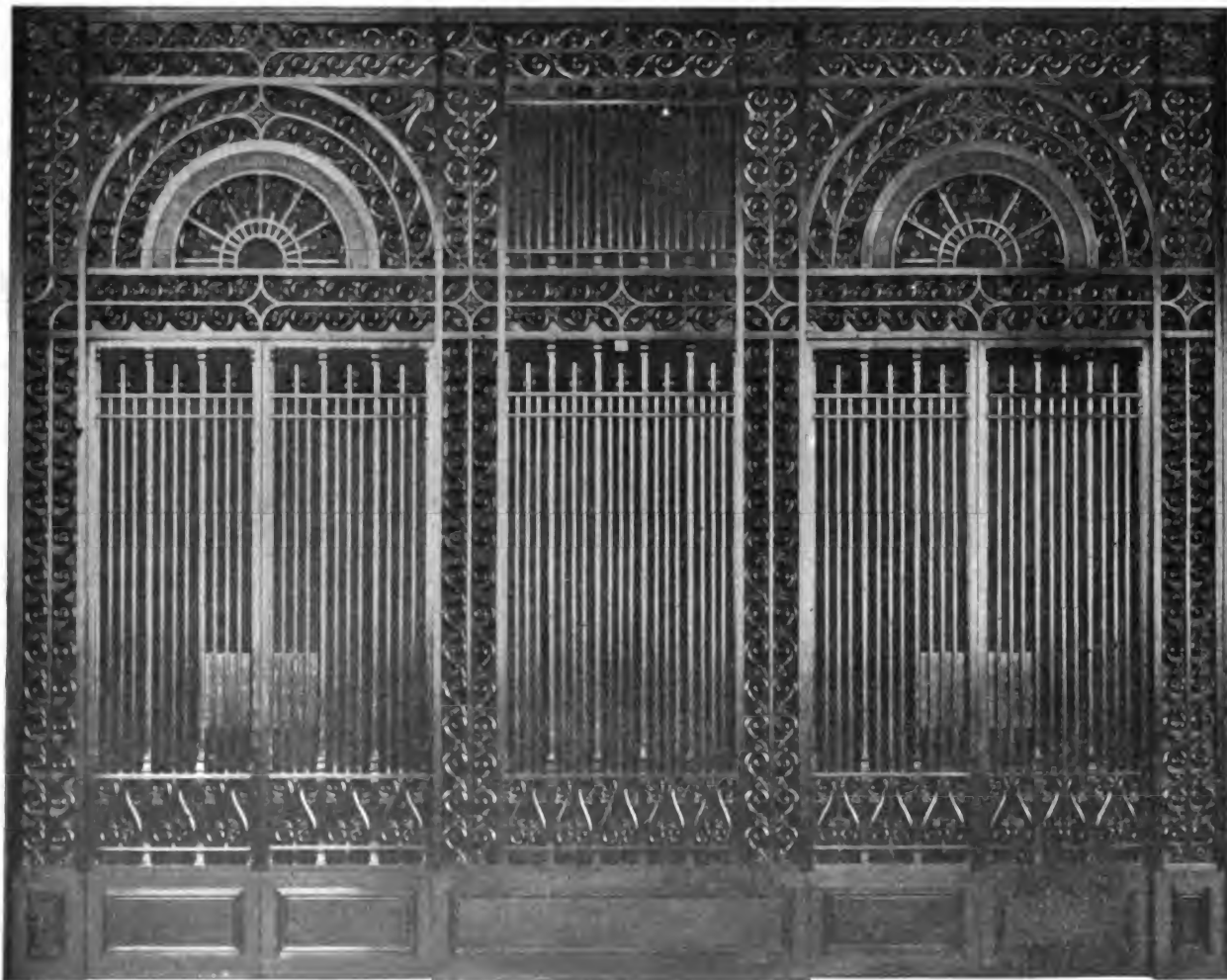
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10,000 feet of heavy Railing and several entrance gates furnished and set by us. 25,000 feet of same style furnished and erected for Washington Cemetery, Brooklyn, N. Y.



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CONSTRUCTION—We employ skilled mechanics only, and use the most approved methods of construction both in shop and field.

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Several hundred feet Spiral Netting (Chain Link) Fence.

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Continued on next page

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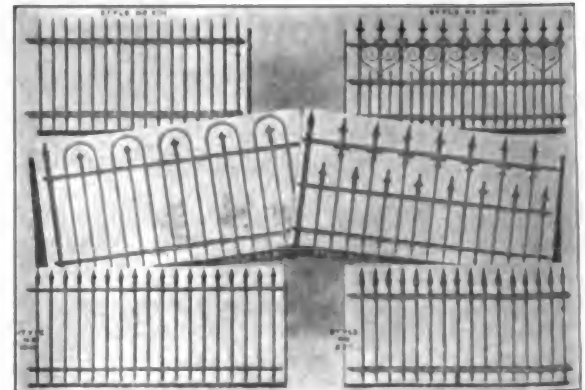
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Very heavy and strong. Especially suitable for mills and factories. Heights, three to eight feet. Fabric made from No. 10 to No. 6 wire, 1½ to 2 inch mesh.



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GATEWAY AND RAILING AT TARRYTOWN, N. Y. PLATE 4468, FROM DESIGNS BY HUNT & HUNT, ARCHITECTS

This illustration shows one of two entrances, each 10 feet between piers and 20 feet high, including arch complete with ornamental lamps; also 366 feet railing 5 feet 6 inches in height above coping. The making of this class of work forms one of the main branches of our business.



RAILING ON BROADWAY, NEW YORK CITY. PLATE 4400, FROM DESIGN BY THEODORE E. VIDETTO, ARCHITECT, DEPARTMENT OF PARKS

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Width between piers, 12 feet; height at center, 6 feet 6 inches. Price, not set, \$135.00.



GATEWAY, EVERGREEN CEMETERY, ELIZABETH, N. J. PLATE 4401
Dimensions: Width between piers, 16 feet; height of main gate, 11 feet 6 inches; width of single gates, 5 feet; height, 8 feet 6 inches.



RAILING ON PRIVATE ESTATE, OYSTER BAY, L. I. PLATE 4467
Dimensions: Length, 450 feet; height, 5 feet; pickets, $\frac{3}{4}$ inch square. This railing is built on cast-iron foundations set in the ground to a depth of 3 feet.



RAILING ON PRIVATE ESTATE, PATERSON, N. J. PLATE 4465
Dimensions: Length, 2,000 feet; height, 6 feet; pickets, $\frac{3}{4}$ inch square. This railing is built on Galvanized Anchor Posts, I-beam section $2\frac{1}{4} \times 3$ inches, set in the ground to a depth of 3 feet, with extra heavy drive anchors.

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6 ornamental gates, each 20 feet between piers. | Methodist Hospital, Brooklyn, N. Y.
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Gateway, 19 feet wide, 14 feet high;
with Railing 8 feet high. |
| Col. A. R. Kuser, Bernardsville, N. J.
1,700 feet Railing, 7 feet 6 inches high. | Brookside Cemetery, Watertown, N. Y.
Flower Memorial Gateway, 21 feet high;
1,600 feet Railing, 7 feet 6 inches high. |
| Ardale Park, Savannah, Ga.
24 Entrance Gates;
31 Ornamental Lamps. | St. John's Cemetery, Brooklyn, N. Y.
6,800 feet Railing, 7 feet high. |
| Gen. E. A. McAlpin, Ossining, N. Y.
2,400 feet Railing, 7 feet high;
Entrance Gate, 10 feet high, 16 feet between piers. | Woodlawn Cemetery, Woodlawn, N. Y.
10,000 feet Railing, 7 feet high;
2 Gateways, 20 feet wide, 12 feet high. |
| Payne Whitney, Manhasset, N. Y.
1,300 feet Railing, 7 feet high. | Coney Island Jockey Club, Sheepshead Bay, N. Y.
5,000 feet Railing, 6 feet 6 inches high. |



AVIARIES, BERNARDSVILLE, N. J. PLATE 3400
This is a part of a series of 5 cages, each 19 feet wide and 32 feet long. We make a specialty of building enclosures for birds and animals of all kinds.

"A.B.C." SYSTEMS

Continued on next page



DRIVING POSTS

GALVANIZED ANCHOR POSTS—They are rigid, strong and durable. The post and its fittings, including the drive anchors, are galvanized by dipping in molten spelter, leaving a thick coat of metal on all parts. No digging is required, the post bar being firmly driven into the ground, then 2 stakes of angle iron are driven through a socket fastened to the base of the post. They are quickly set and are absolutely firm in maintaining their true alignment.

ADVANTAGES—Our products possess these very important features: 1. The posts and all parts of the fences are galvanized and will last indefinitely. 2. The Anchorage keeps post, top rail and entire fence true to line and grade. 3. Our fences will not burn up or rot away. 4. They are attractive in appearance.



WOVEN WIRE FENCE. PLATE 3376

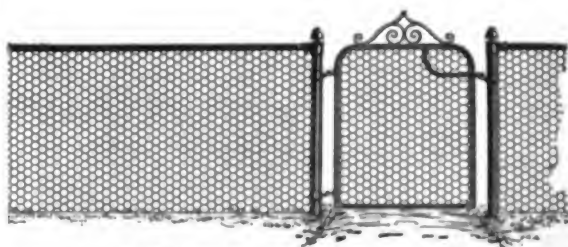
Built in heights from 3 to 5 feet. The fabric is made of heavy galvanized wire; the posts are placed 8 feet apart. Price, set complete, 60 to 80 cents per lineal foot.



TENNIS ENCLOSURE. PLATE 3397

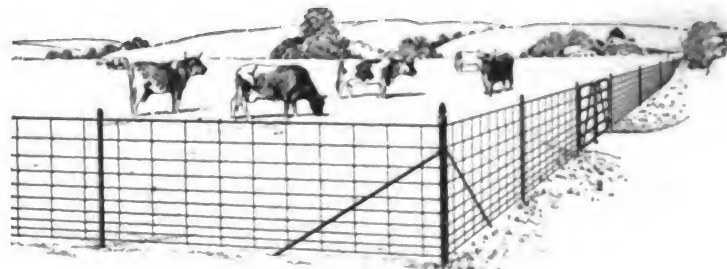
We make a specialty of fence for tennis courts, either enclosing the whole court, or building back-stops across the ends only, as desired. These fences are used on some of the best known country clubs, and on hundreds of private grounds as well. They are very durable, trim in appearance and never get out of order.

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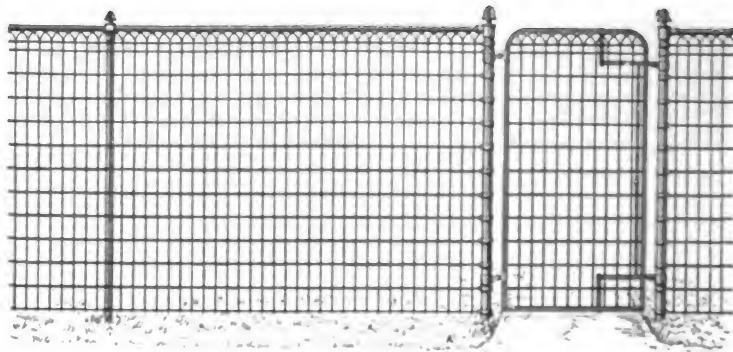
WIRE NETTING FENCE. PLATE 3318

The netting in this fence is made of No. 16 wire, 2-inch mesh, galvanized after it is woven, which makes a very durable fencing material. Built in heights from 3 to 8 feet. Price, set complete, in lots of 200 feet or more, 50 to 90 cents per lineal foot.



FARM AND PASTURE FENCE. PLATE 3316

This is one of the strongest and most serviceable fences for cattle pasture or general farm use that it is possible to build. The posts will outlast wood many times over. The netting is made of No. 9 galvanized steel wire. Heights, $3\frac{1}{2}$ to 5 feet. Price, set complete, 30 to 40 cents per lineal foot.



WOVEN WIRE FENCE, 5 TO 8 FEET HIGH. PLATE 3305

This fence is like that shown by plate 3376. The posts are large-size Anchor Posts which are used with fences 5 feet in height and over. The netting is 3 x 6-inch mesh. $1\frac{1}{4}$ x 6-inch netting can be furnished if desired. Price, set complete, 75 cents to \$1.35 per lineal foot, according to height and size of mesh.



POULTRY RUNS ON PRIVATE ESTATE, TARRYTOWN, N. Y. PLATE 3398

Our poultry and kennel fences, pigeon cages and aviaries for game birds are not only better looking, but will last two or three times as long as those built with wooden framework. Our method of rat-proofing the outside of the enclosure gives absolute protection against rats and weasels. Plans and specifications showing the correct size and arrangement of the yards for the number of birds to be confined furnished on application.

Continued on next page



WOVEN WIRE FENCE, 8 FEET IN HEIGHT. PLATE 3399

For the protection of gardens, the inclosing of country places, or for any situation where trespassers are to be kept out and privacy secured, this fence is serviceable and very durable. It can be furnished either with or without the top arms and barbed wires.

UNCLIMBABLE FENCES—We illustrate on this page a few examples of unclimbable fences of which we have built many thousand feet for some of the leading manufacturing establishments of the country; also for parks, municipal play-grounds, private estates, reservoirs, railroads, gas companies, etc.

Fence shown by plate 3399 is used very largely for private estates and parks.

Plate 3401 illustrates a fence of Chain Link Woven Steel, the strongest fence material made. It is woven of heavy galvanized wire, the mesh being so small that it is impossible to get a foothold in it. We make it in any height up to 12 feet.

These fences outlast a board fence two or three times over, while the cost of maintenance is much less.

UNCLIMBABLE FENCES FOR INDUSTRIAL PROPERTIES.

American Locomotive Co., Richmond, Va. 2,500 feet Chain Link Fence, 7 feet high.	Montreal Locomotive Works, Montreal, Canada. 7,100 feet Chain Link Fence, 7 feet high.
Belmont Park (Westchester Racing Ass'n), Queens, N. Y. 15,000 feet Close Mesh Fence, 6 feet high.	Plainfield Union Water Works, Plainfield, N. J. 1,900 feet Iron Railing, 5 feet high.
Bristol Patent Leather Co., Bristol, Pa. 4,600 feet Chain Link Fence, 7 feet high.	Passaic Water Works, Paterson, N. J. 10,000 feet Netting Fence, 8 feet high.
Consolidated Gas Co., New York City. 1,100 feet Iron Railing, 8 feet high.	Fayette R. Plumb, St. Louis, Mo. 2,000 feet Chain Link Fence, 7 feet high.
Water Works, Columbia, S. C. 2,900 feet Close Mesh Fence, 8 feet high.	Rome Brass & Copper Co., Rome, N. Y. 2,100 feet Chain Link Fence, 10 feet high.
General Electric Co., Schenectady, N. Y. 425 feet Iron Railing, 7 feet 6 inches high.	Virginia-Carolina Chemical Co., Charleston, S. C. 8,600 feet Chain Link Fence, 7 feet high.
Susquehanna Silk Mills, Lewiston, Pa. 1,825 feet Iron Railing, 7 feet high.	

NOTABLE INSTALLATIONS OF WIRE FENCES ON PRIVATE ESTATES.

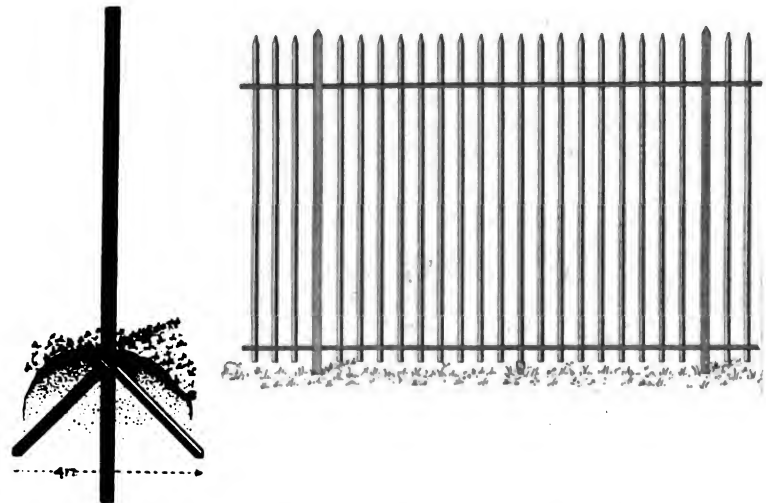
H. P. Belmont, Hempstead, N. Y. 5,000 feet Woven Wire Fence, 6 feet 10 inches high.	John D. Rockefeller, Pocantico Hills, N. Y. 7,700 feet Netting Fence, 6 and 7 feet high.
Sen. John F. Dryden, Bernardsville, N. J. 8,600 feet Farm Fence, 4 and 5 feet high.	John S. Phipps, Westbury, N. Y. 7,000 feet Woven Wire Fence, 6 feet 10 inches high.
Howard Gould, Port Washington, N. Y. 32,000 feet Netting Fence, 4 and 8 feet high.	N. F. Palmer, Port Chester, N. Y. 8,300 feet Netting Fence, 8 feet high.
5,000 feet Poultry Fence, 7 feet high.	James B. Taylor, Jericho, N. Y. 7,000 feet Netting Fence, 6 feet high.
Isaac Guggenheim, Port Washington, N. Y. 12,000 feet Woven Wire Fence, 6 feet 8 inches high.	Howard Willets, White Plains, N. Y. 42,000 feet Lawn Fence, 4 feet high.
Edwin Hawley, Babylon, N. Y. 1,500 feet Chain Link Fence, 8 feet high.	Est. of Wm. Ziegler, Noroton, Conn. 13,000 feet Netting Fence, 4 and 5 feet high.
Thomas N. McCarter, Rumson, N. J. 22,000 feet Woven Wire Fence, 4 feet 6 inches high.	Rumson Club, Rumson, N. J. 2,650 feet Tennis Fence, 10 feet high.
W. H. Macy, Harrison, N. Y. 36,500 feet Lawn Fence, 4 feet high.	Ardlev Club, Ardsley-on-Hudson, N. Y. 1,000 feet Tennis Fence.

"A.E.C." SYSTEMS



CHAIN LINK FENCE. PITTSFIELD WORKS OF THE GENERAL ELECTRIC COMPANY. PLATE 3401

This photograph shows part of 6,000 feet of Chain Link Woven Steel Fence built by our Hartford Branch for the new works of the General Electric Company, at Pittsfield, Mass. Since this fence was installed, we have erected nearly a mile of additional fence for the same company at their main plant at Schenectady, New York.



IRON RAILING ON ANCHOR POSTS. PLATE 4425.

Very strong and substantial. "Anchor" posts of 3-inch I-beam section are used, held securely by two large blades driven through socket at base of posts. Simplest railing in construction and easiest to set. Very little digging required in placing posts. Rails are heavy channel. Pickets made in any sized bars desired.



RAILING. THE EDISON COMPANY, BOSTON, MASS. PLATE 4472

This railing is 8 feet high and 1,200 feet in length, built with galvanized I-beam posts, as illustrated in plate 4425. The posts are so strong that no braces are required.

The L. Schreiber & Sons Co.

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STEEL, IRON OR BRONZE ELEVATOR CARS AND ELEVATOR ENCLOSURES; WIRE WORK AND WIRED GLASS ELEVATOR ENCLOSURES; BRASS, BRONZE OR STEEL ENTRANCE GATES, from the plainest to the most elaborate; STEEL FOLDING GATES AND GUARDS; IRON AND BRONZE DOORS for Churches, Mausoleums, Banks, etc.; CASHIER'S CAGES, MONEY GUARDS

WINDOW GUARDS of every Class; IRON WINDOW FRAMES; BRONZE NAME PLATES; IRON, BRONZE AND BRASS SIGNS, SCREENS AND WICKETS; BRONZE TABLETS

STABLE WORK: STEEL OR WIRE STALL AND STABLE WINDOW GUARDS; IRON HAY RACKS, MANGERS, ETC.

RESERVOIR VASES; TREE BOXES; STEEL WALL TIES

Other Wire Products: CINMANCO LAWN, GARDEN AND PARK FENCES; CINMANCO FLY SCREENS AND SCREEN DOORS; TOOL ROOM PARTITIONS; SKYLIGHT GUARDS; ORNAMENTAL SIGNS (all sizes) in all Combinations of Design

FACILITIES—Our Factory covers 60,000 square feet and is equipped with modern and specially-designed machinery. We employ a large force of skilled mechanics. An enviable reputation, built up during the past 68 years, should be a sufficient guarantee of our ability to execute work in our line with skill and promptness. Substantial references without number are at our command.



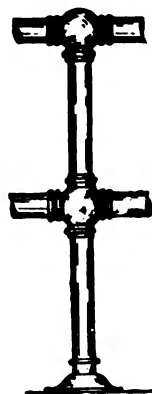
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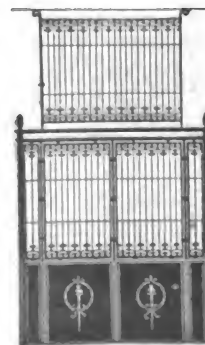


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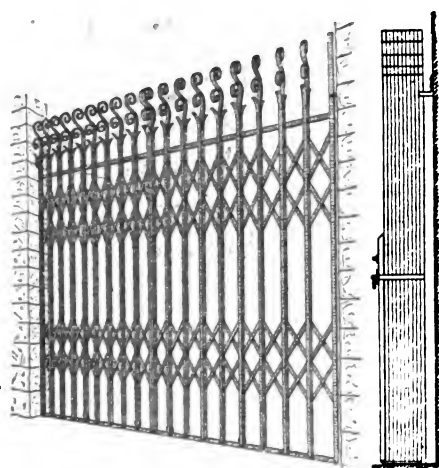
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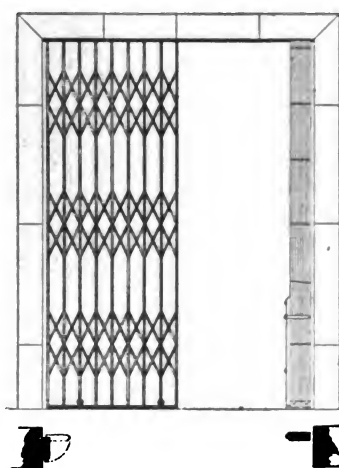
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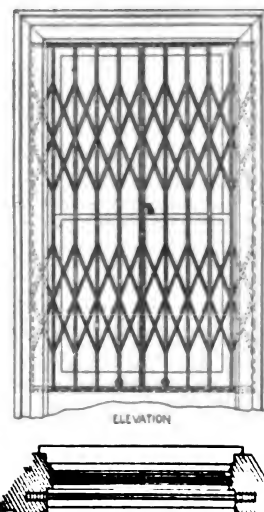
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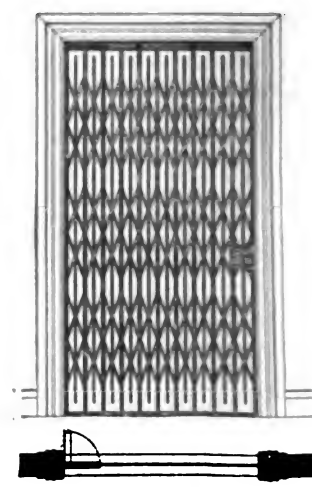
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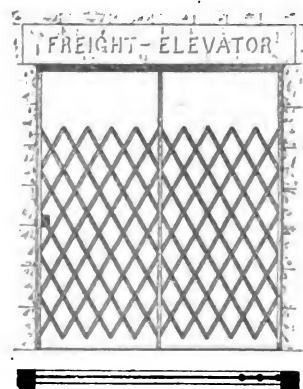
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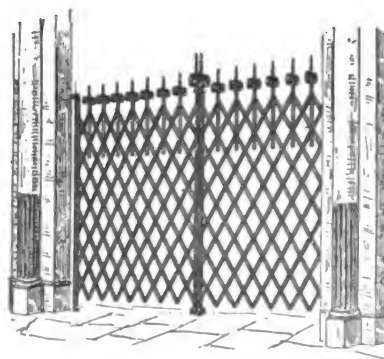
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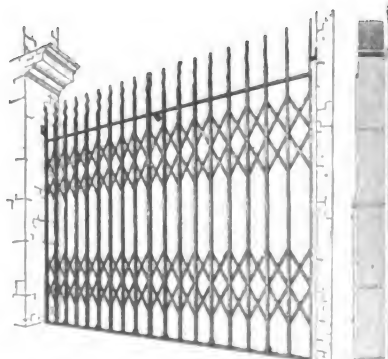
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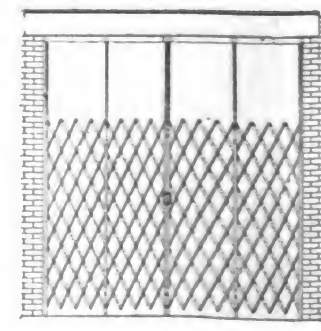
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NO. 1254K—"PITT" FOLDING GATE. RUBBER-TIRED WHEELS ON FLOOR



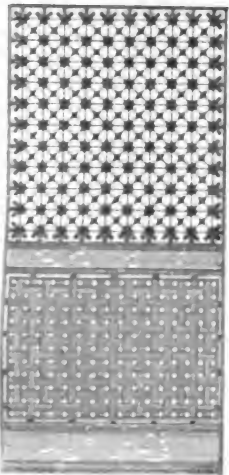
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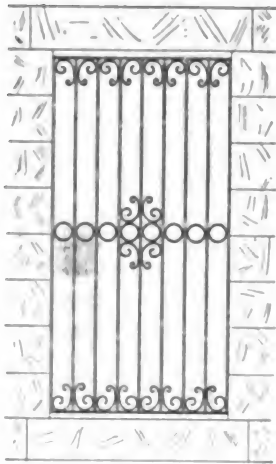
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"A.B.C." SYSTEMS

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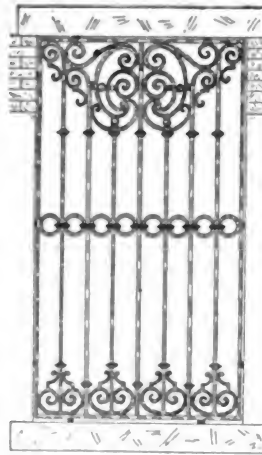
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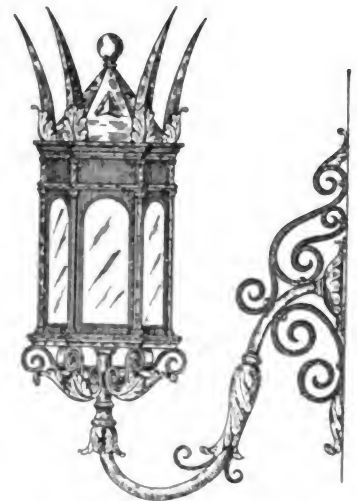
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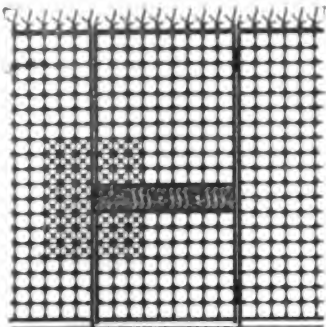
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NO. 647K—IRON WINDOW
GRILLE



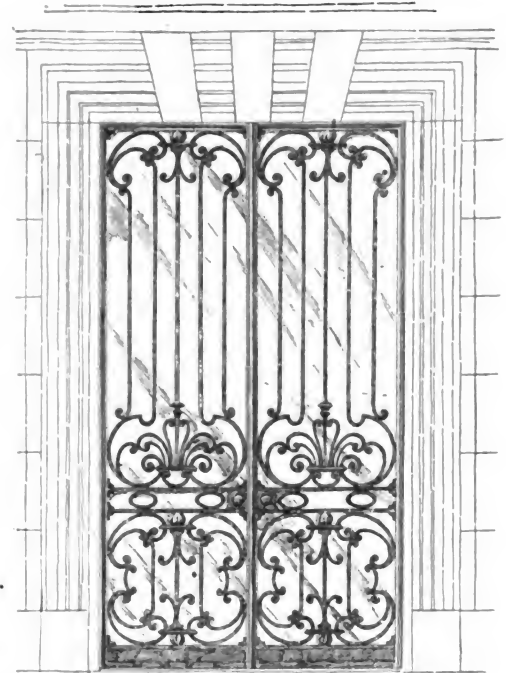
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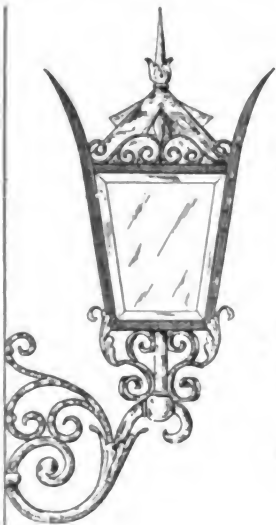
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FICE RAILING, WITH GATE



NO. 334K—WROUGHT IRON ENTRANCE GATES



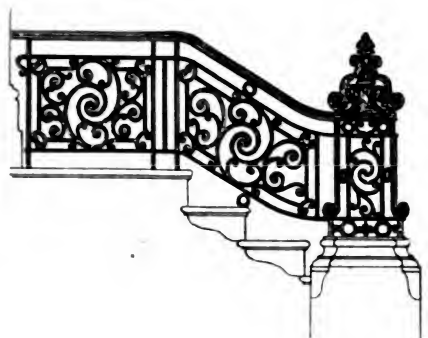
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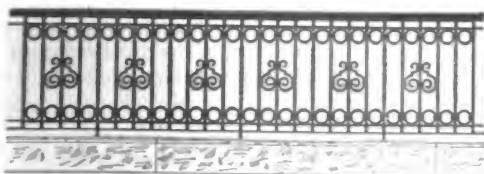
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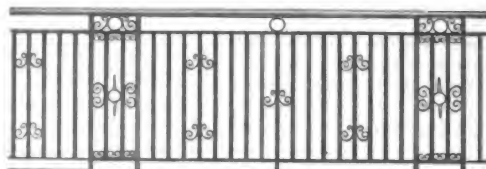
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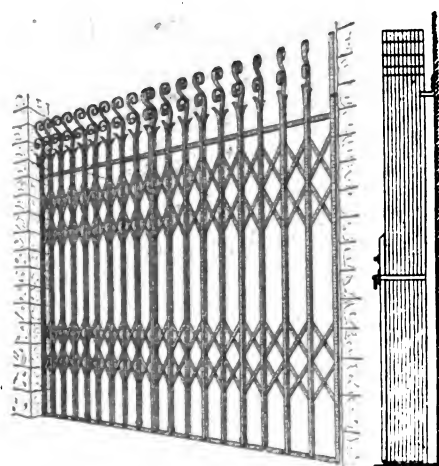
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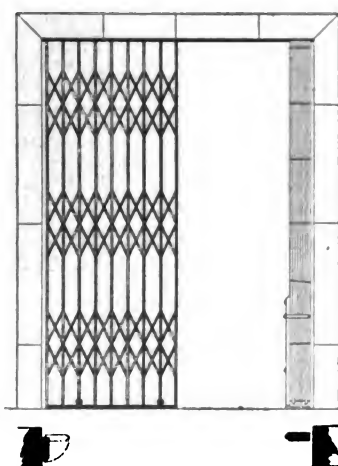
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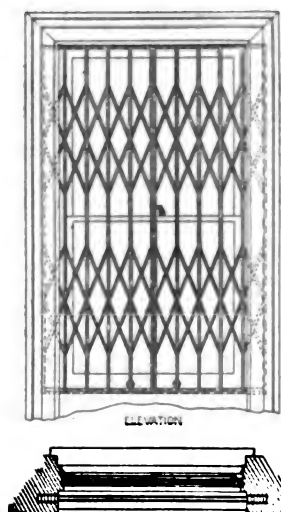
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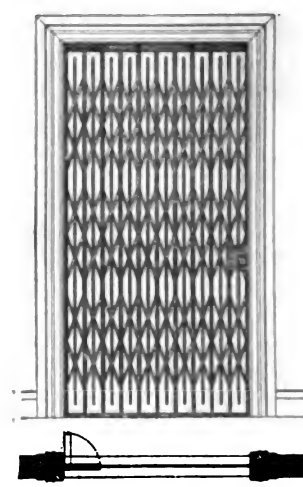
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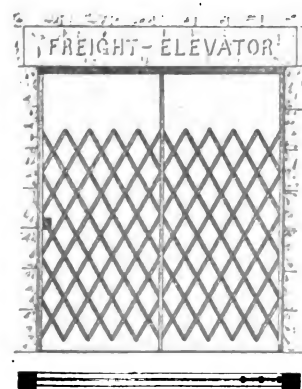
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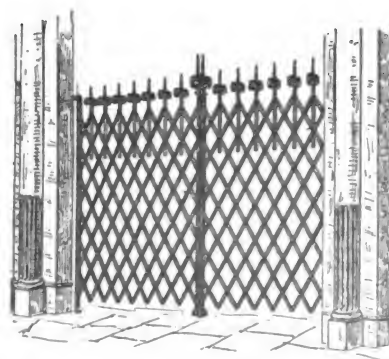
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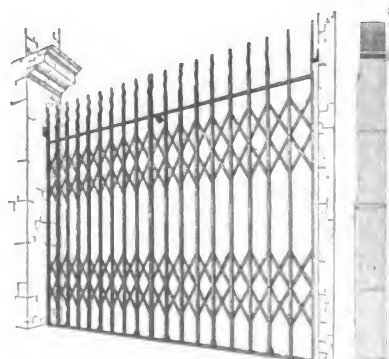
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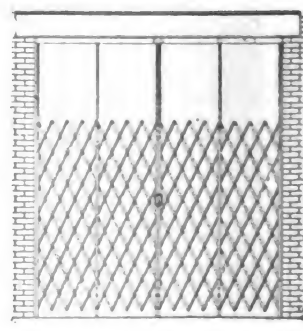
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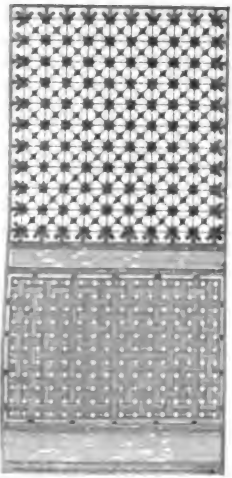
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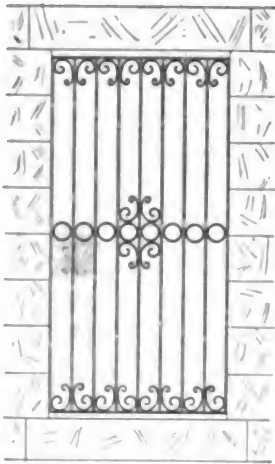
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"A.B.C." SYSTEMS

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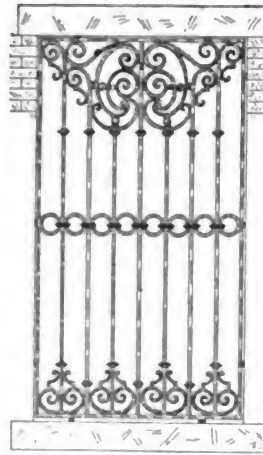
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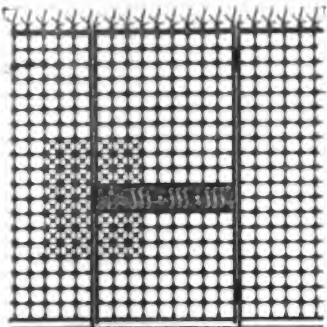
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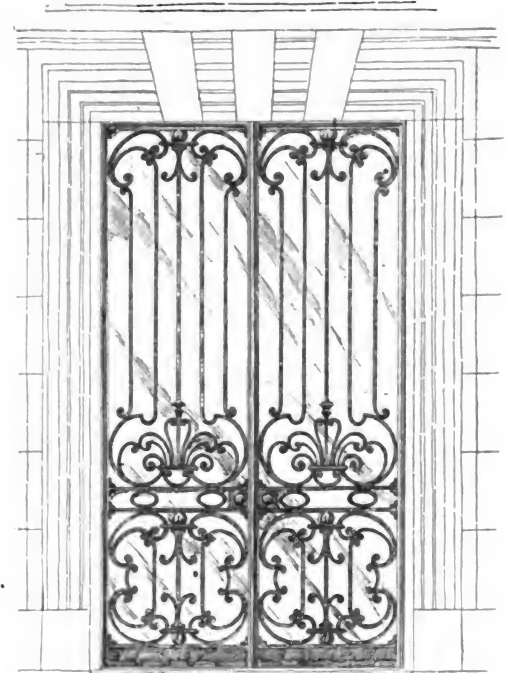
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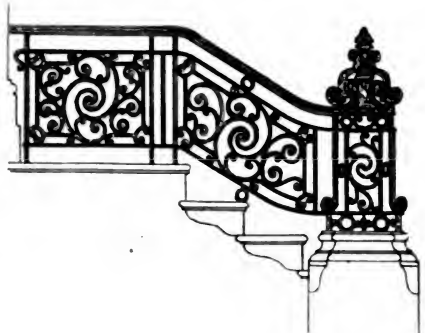
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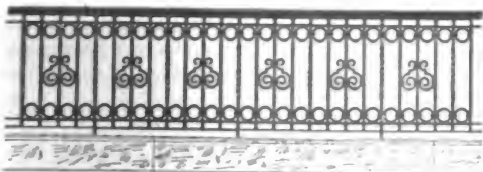
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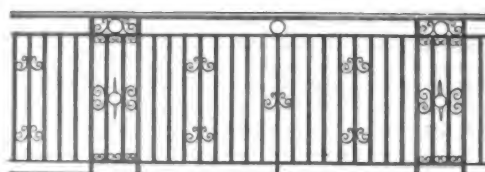
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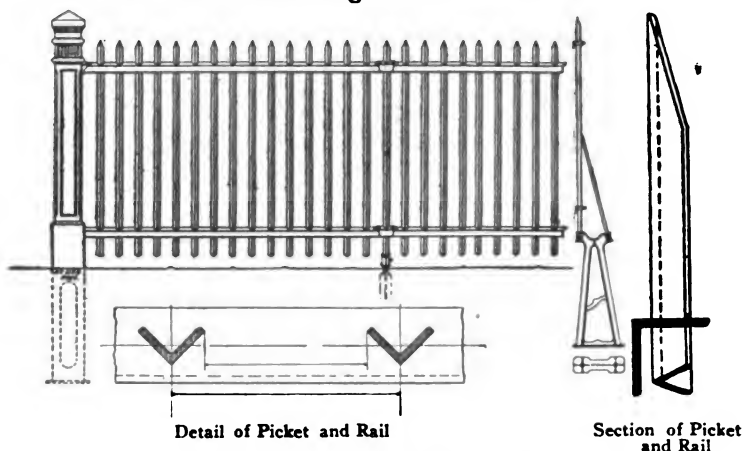
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96-102 CHURCH STREET
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DESCRIPTION—These products are the result of the careful development of the highest grade of material and skilled labor extending over a period of many years.

Our present plant, covering an area of 16 acres, embraces the most modern equipment, thereby permitting us to guarantee prompt deliveries and the satisfactory execution of all orders. Additional information and designs, with estimates covering erection, will be furnished upon request. The following illustrations of our products, and list of customers to whom we refer, will be of interest to architects and engineers.



Detail of Picket and Rail

Section of Picket and Rail

ANGLE PICKET FENCE, DESIGN NO. 771

ANGLE PICKET FENCE No. 771—This type is especially designed for enclosing factories, cemeteries, and institutions. Stronger, less expensive and more effective than solid iron picket fence, *because* it is made of HIGH-CARBON STEEL ANGLES. End posts are cast in one solid piece, as shown. Can be furnished in any height up to 10 feet. At slight additional cost, pickets can be curved out above the top rail, making the fence unclimbable.

HOW TO SPECIFY—Pickets for light fence, $1 \times 1 \times \frac{3}{16}$ "; for heavy fence, $1\frac{1}{4} \times 1\frac{1}{4} \times \frac{3}{16}$ " high carbon steel angles. Rails for light fence, $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{16}$ "; for heavy fence, $2 \times 2 \times \frac{3}{16}$ ", or $\frac{1}{4}$ " angles. Line posts, same size as pickets, fitted with adjustable, malleable-iron brackets. For heavy fence, $2 \times \frac{5}{8}$ " flat, or 3" "I" beam line posts should be used. Spread anchor cast-iron ground bases and panel supports. Panel, 8 feet long.

PRICES

72" Fence with 1" pickets, 5" o. c.\$1.40
 84" Fence with $1\frac{1}{4}$ " pickets, 5" o. c. 1.60

"A.B.C." SYSTEMS



ENTRANCE GATES

Furnished and Erected for Albert Lieber, President Indianapolis Brewing Co.

A wide range of similar designs will be forwarded upon request.

REFERENCES—Recent contracts of a similar nature include three massive entrance gates for the Convent of the Sacred Heart of Mary, Tarrytown, N. Y., William H. Gompert, Architect.

Entrance gates and heavy wrought-iron railing for

Ex-Vice-President Fairbanks, Indianapolis, Ind.

H. Ames, President Ames Shovel and Tool Works, Boston, Mass.

C. S. Mellen, President N. Y., N. H. & H. R. R., Stockbridge, Mass. (Residence.) (See Design, No. 518, our Cat. "R.")



IRON PICKET FENCE

Design No. 398 with Panel Post "R."

WROUGHT IRON FENCE No. 398—This type of wrought iron railing is adaptable for any height upward of 46 inches, made with $\frac{5}{8}$ -in., $\frac{3}{4}$ -in., or 1-in. square pickets, forged points on 4-in. centers. Rails solid or channel iron. Adjustable picket line posts, spread anchor cast-iron foundations and panel supports. Line posts can be made with split tops or ornaments.

PRICES

48" Fence with $\frac{5}{8}$ " pickets.\$1.50 per lin. foot.
 60" Fence with $\frac{3}{4}$ " pickets. 1.75 per lin. foot.
 Panel posts 15.00 upwards.

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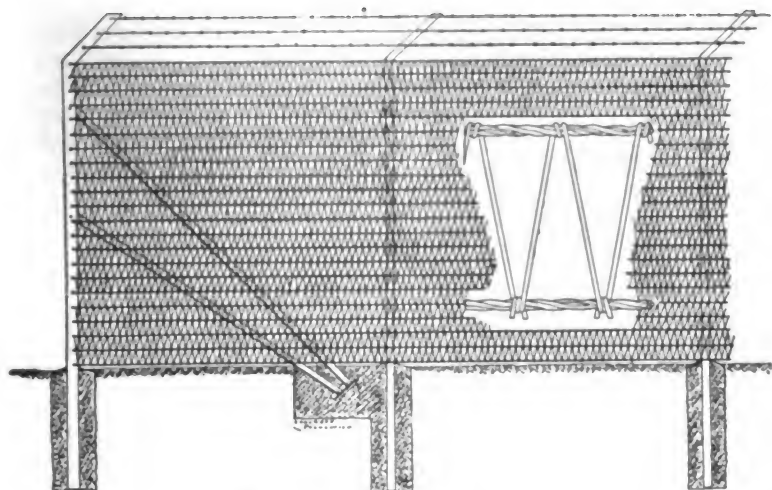


NEW IDEAL LAWN FENCE

NEW IDEAL LAWN FENCE—The "New Ideal" is one of our most practical wire-lawn fences, although many others are made from different designs. End and gate posts are 2-in. tubular, equipped with ratchets for tightening the wire. Line posts are either tubular or angle. Top rail 1 3/8-in. Wire fabric throughout made of two strands of No. 11 galvanized wire, twisted together. Bottom meshes are close enough to turn chickens and small animals. Can be furnished in all heights from 30-in. to 60-in.

PRICES

36" Fence.....	\$0.65
42" Fence.....	.70
48" Fence.....	.80



ELLWOOD NON-CLIMBABLE FENCE

ELLWOOD NON-CLIMBABLE FENCE—On one-piece steel angle posts, erected for Meadow Brook Hunt Club, Westbury, L. I., enclosing field for the International Polo Match, 1911, Warren & Wetmore, Architects.

SPECIFICATIONS—Heights, 75, 84, 91 or 99" over all. End posts 2 x 2 x 5/16" high carbon steel angles, or 3 x 3/4" "T" iron. Line posts, 1 1/2 x 1 1/2 x 3/16" or 1/4" angles, spaced 10 feet o. c. Top 15" bent on an angle of 45 degrees. For 99" fence, 2 x 2 x 1/4" line posts should be used. Posts can be furnished painted black, or galvanized by the **HOT DIPPING PROCESS**. Wire fabric, Ellwood "J," 2" mesh, No. 12 1/2 wire with lateral cables of two strands of No. 12 1/2 wire, or Ellwood "K," same mesh, with lateral cables of three strands of 12 1/2 wire on 4" centers. This material is heavily galvanized. On flared top of posts, three courses of thick set galvanized barb wire, 5" o. c.

PRICES

75" Fence with black posts.....	\$0.40	75" Fence with galvanized posts..	\$0.45
84" Fence with black posts.....	.45	84" Fence with galvanized posts..	.50
91" Fence with black posts.....	.50	91" Fence with galvanized posts..	.55

The Ellwood NonClimbable Fence has recently been furnished and erected for enclosing the following estates and commercial properties:

E. C. Converse, Greenwich, Conn., 41,000 feet.

C. S. Mellen, Stockbridge, Mass., 3,000 feet.

W. H. McCord (Pres. Post & McCord), Greenwich, Conn., 3,000 feet.

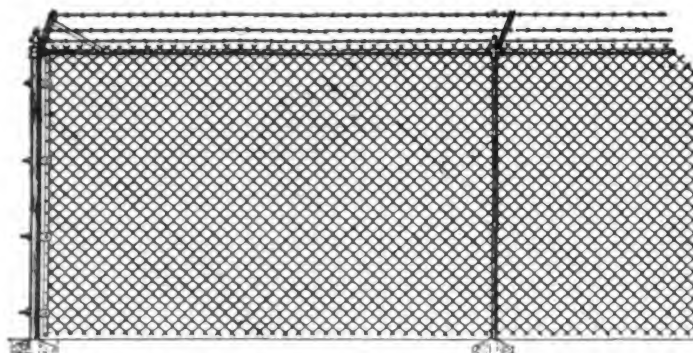
Watertown, N. Y., plant of New York Air Brake Company, 6,000 feet.

Saurer Motor Truck Company, Plainfield, N. J.

"A.B.C." SYSTEMS

CHAIN LINK FENCE—Where unusually heavy non-climbable fence is wanted, "Chain Link" is recommended. Specifications are arranged to meet existing conditions.

This fence can be furnished in any height up to 8 feet, either with or without the top rail and barb wire. The steel angle post is used for fences without a top rail, and is set in concrete. Standard mesh is 2 1/4 in. Wire from No. 11 up to No. 6, gal-



CHAIN LINK FENCE

vanized. Each end post has a clamp attachment and rods for tightening the wire, making a simple and absolutely sure way of stretching the fabric.

PRICES

72" Fence, No. 9 wire with top rail and barb wire.....	\$0.90
Same, with No. 6 wire.....	1.00



TENNIS FENCE

Tennis Court Fence Erected for Teachers' College Field, New York City. Mr. W. W. Klein, Engineer.

TENNIS COURT FENCE—This type of fence has proven the most dependable for providing rigid, lasting construction at moderate cost. End posts are 2 x 2 x 5/16 in. H. C. steel angles, or 3 x 3 x 3/8 in. "T's." Line posts 1 1/2 x 1 1/2 x 1/4 in., or 2 x 2 x 1/4 in. H. C. angles, 8 ft. O. C., all set 3 feet deep in solid concrete. Posts can be furnished galvanized by the *hot dipping process* or painted. Top rail 1 3/8 in. tubular. Supporting wires of No. 9 coiled steel galvanized wire, 12 in. O. C., over which is laid the Hexagon Netting. Netting is tied to each supporting wire every 18 inches and cannot become loose or baggy. The standard netting is 1 1/2-in. mesh, No. 16 wire, *galvanized after weaving*.

PRICES

8 ft. fence posts painted.....	\$0.85	8 ft. fence posts galvanized.....	\$0.90
9 ft. fence posts painted.....	.95	9 ft. fence posts galvanized.....	1.00
10 ft. fence posts painted.....	1.00	10 ft. fence posts galvanized.....	1.10

REFERENCES—Recent contracts of a nature similar to Angle Picket Fence design No. 771 (see illustration) have been furnished and erected for:

New York State Fair Grounds, Syracuse, N. Y., 6,000 feet.

Mt. Hope, New York Cemetery, 3,000 feet.

Thomas G. Plant Company, Boston, Mass., 2,000 feet.

J. E. Barbour Silk Mills, Paterson, N. J., 2,000 feet.

The Keepsdry Construction Co.

Builders of "Keepsdry" Skylights and Turret Sash, Show Windows and Fronts; Ornamental Iron and Structural Steel

145-47-49-51 WEST 18th STREET
NEW YORK CITY, U. S. A.

PRODUCTS—"KEEPSDRY" SKYLIGHTS AND TURRET SASH, SHOW WINDOWS AND HERCULES SASH OPERATING DEVICE

and widest possible lights without the least danger of cracking of glass after installation. "Keepsdry" skylights look new many years after erection.

SERVICES — General Contractors for Factory Buildings.

Ornamental and Light Structural Iron Work.

General Sheet Metal Work.

THE KEEPSDRY SKYLIGHT—(Patented) — This skylight is perfectly watertight and weatherproof and remains so permanently without the use of putty, felt, oakum or packing of any kind. There is nothing about it to deteriorate or wear out, no felt to rot nor putty to get hard and crack.

The "Keepsdry" skylight carries the glass perfectly evenly and firmly, but with ample allowance for expansion and contraction, so that the glass is absolutely free from any liability to break (except from a blow). The "Keepsdry" skylight makes it possible and entirely safe to use the longest

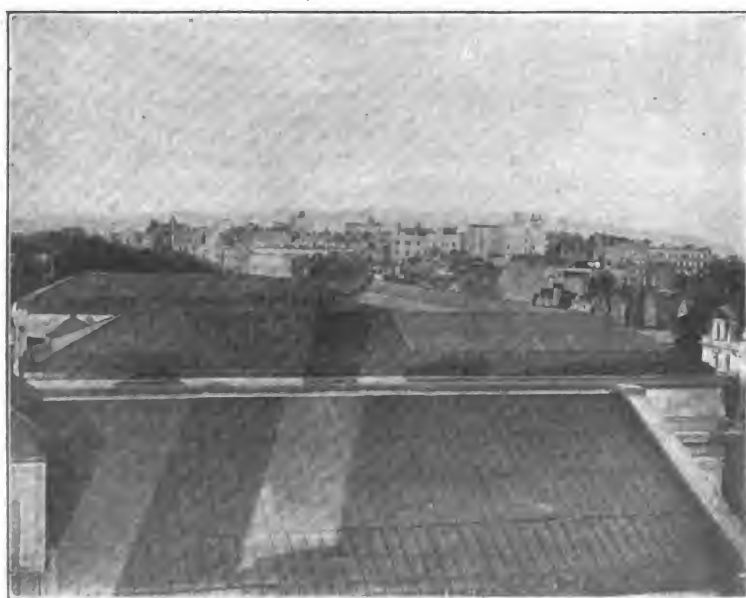


CORNER OF NEW FRONT OF WASHINGTON MARKET, NEW YORK, FITTED WITH "KEEPSDRY" SKYLIGHTS AND SHOW WINDOWS

APPLICATION — We have erected many thousand feet of skylight with lights the longest to be obtained—namely 11 feet (about twice as long as can be carried safely by any other system of glazing). In one of our skylights, 11 feet by 165 feet area, now three years old, the glass is 22 inches by 132 inches (11 feet), and since installation not a light has broken. "Keepsdry" skylights are tight against leakage, with a pitch of only $\frac{1}{2}$ inch in 12 inches.

Note in half-size detail how glass is carried on lead strips. No condensation on skylight bar, no leakage anywhere.

OTHER WORK—We also build show windows, especially of steel and glass, or copper and glass, and every kind of ornamental iron and structural steel in connection therewith.



90,000 SQ. FT. OF "KEEPSDRY" SKYLIGHTS, METROPOLITAN MUSEUM OF ART, NEW YORK



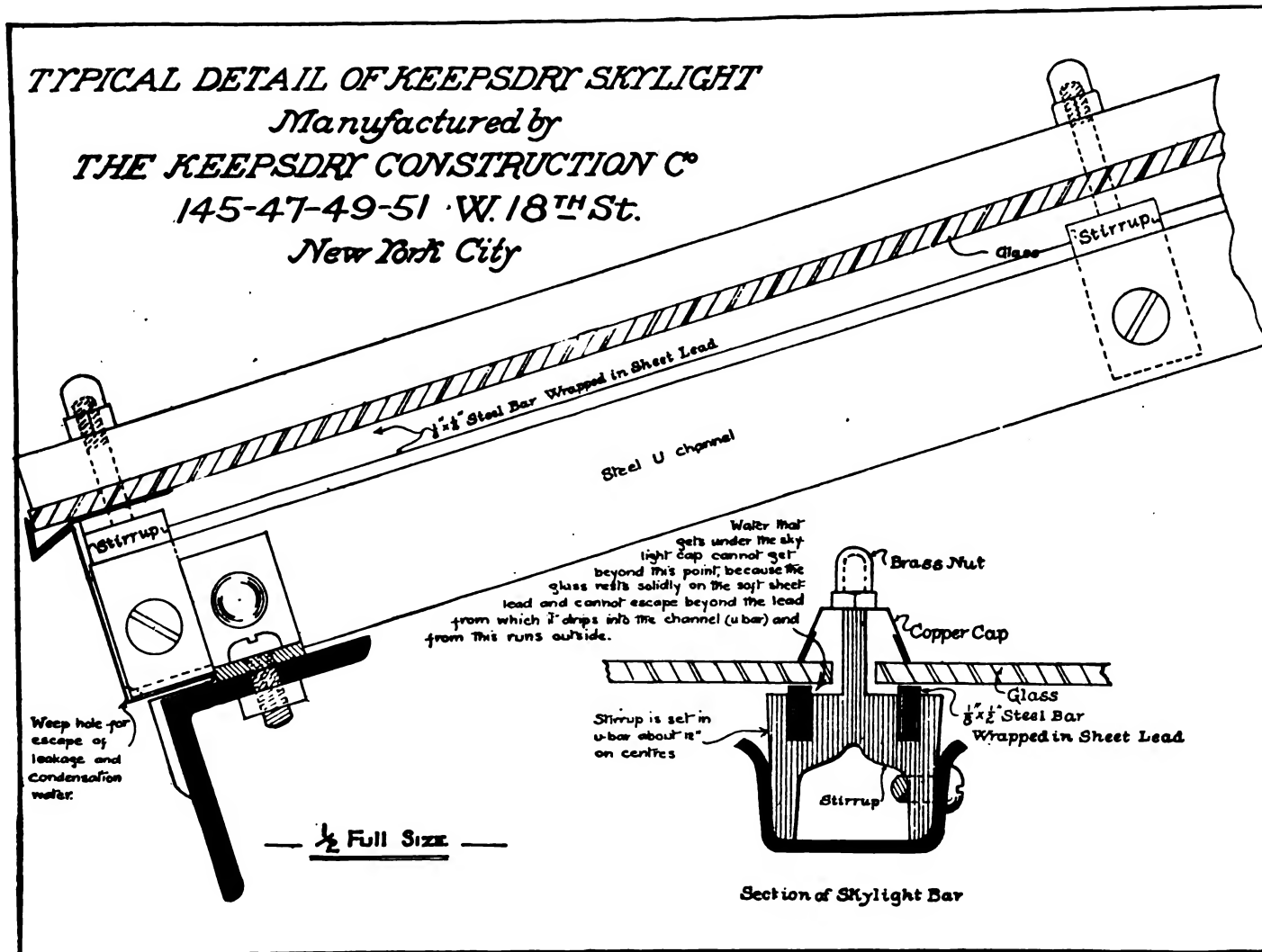
50,000 SQ. FT. "KEEPSDRY" GLASS SURFACE, VITAGRAPH CO. PLANT



OLD BUILDING REMODELED FOR MOVING-PICTURE STUDIO FITTED WITH "KEEPSDRY" SKYLIGHTS



WASHINGTON MARKET, NEW YORK, ROOF UNDER RECONSTRUCTION SHOWING "KEEPSDRY" SKYLIGHTS



DETAILS OF CONSTRUCTION

National Ventilating Company

Manufacturers of the

Multiple-Unit System of Puttyless Skylights

General Office and Factory

337-339 EAST TWENTY-SIXTH STREET

NEW YORK, N. Y.

PRODUCTS—MULTIPLE-UNIT PUTTYLESS SKYLIGHTS, SIDE LIGHTS, OPERATING SASH, AND NATIONAL VENTILATING DEVICES

ADAPTABILITY—Skylights for railway terminals, power stations, machine shops, factories, foundries, libraries, museums, art galleries, and all other buildings whereon permanent watertight skylights of large area are required.

DISTINCTIVE FEATURES AND ADVANTAGES—Referring to Fig. 1, next page, the upper bar and upper lights are supported in a **fixed manner** by the purlin under them, while the lower bar, which supports the lower lights, is secured to the same purlin in a loose manner permitting it to *expand freely*. This construction being repeated at each purlin permits movement (due to expansion, contraction, or vibration along the cross-sectional line of the skylight) of the **cap, glass and bar** of each unit or tier of glass, **all in the same direction** and independently of every other unit or tier.



GROUP OF MULTIPLE-UNIT SKYLIGHTS OVER THE CONCOURSE OF THE PENNSYLVANIA TERMINAL, NEW YORK, N. Y.
Area of this group, about 30,000 sq. ft. Total area on the Terminal, 83,000 sq. ft.

"A.B.C." SYSTEMS

Continued on next page

Along the longitudinal line of the building the steel frame and the entire length of the skylight are each taken as a separate unit. The difference, nearly 100 per cent., in the expansion and contraction of the materials (glass and steel), is thoroughly taken care of by the brass spreader clips shown in transverse section at supporting bar on next page (Fig. 2). These spreader clips are placed over each cap bolt (spaced about 12 inches along each skylight bar), and, incidentally, they serve also to better secure in place the brass bolts for holding the caps.

The cap is strong and yet resilient. Its upper half is of an inverted "U" shape, which provides strength and rigidity, while the lower half, especially at the lower extremities, is resilient so as to conform thoroughly to the surface of the glass, when secured in position.

Gutters and parts that are non-accessible without removing the glass, are of non-corrosive material. The entire top of the bar is covered with eight-ounce copper, the same being applied while the last coat of paint on the bar is still wet. For the glass a flexible bearing is formed of sheet metal (see transverse section on next page, Fig. 2), which adjusts itself to any warps or irregularities of the glass along its bearing line.

If desired, the bottom of the bar is also covered. Both the top and bottom bar covers are made by special dies and both fit the bar snugly.

No packing or filling substance of any kind is required, and no material is used other than glass and metal.

ADOPTED BY LEADING RAILROADS—The Pennsylvania Railroad Company, after carefully examining all other types of puttyless skylights in actual service, adopted the construction herein shown and described for its new New York & Long Island Railroad Passenger Station, 31st to 33d Streets and

7th to 8th Avenues, New York City, on which building we completed, about two years ago, the erection of 83,000 square feet of skylight, embracing nearly every known variety, such as hipped, ridge, flat, barrel-roof, saw-tooth with bowed ridges, circular, elliptical, etc., all constructed with flat glass.

The New York Central Railroad Company also is using this construction on its new Passenger Station at 42d Street, New York City, and on its New York City Power Station at 50th Street and Lexington Avenue.

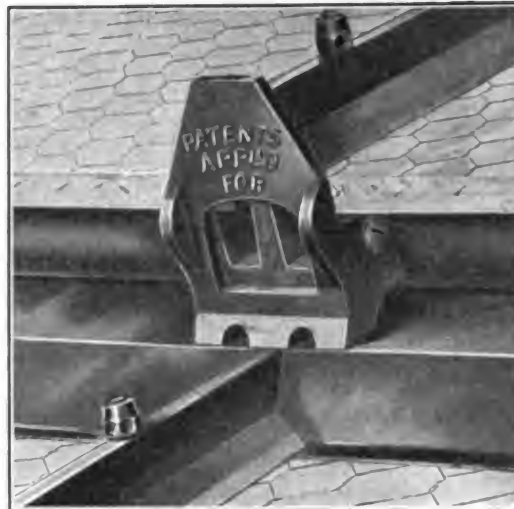


FIG. 1.—HALF-SIZE PERSPECTIVE
Showing exterior view over each purlin, between the eave and the ridge

PUBLIC BUILDINGS—The skylights on the New York Stock Exchange Building have recently been replaced by Multiple Unit Skylights. These skylights are also being erected on the new United States Post Office and the new Municipal Building in New York City, McKim, Mead & White, Architects, on the new Passenger Station of the Norfolk Terminal Railway Company, Norfolk, Va., Reed & Stem, Architects, and elsewhere.

RESULT OF THOROUGH INVESTIGATION—The above described system of skylight construction is the result of experience and investigations made by us in this line extending over a period of more than seven years.

Our efforts during this time have been directed to producing, not the cheapest, but the best construction. *With skylights true economy does not consist in buying the cheapest.*

OTHER NOTABLE INSTALLATIONS—As evidence of our experience in skylight work we refer to the following, among many installations made by us during the past seven years, some of which have been partly replaced by the new and improved system above described.

BUILDINGS, LOCATION, AND ARCHITECTS

New Walters Art Gallery, Baltimore; New Library, Bar Harbor, Me., and Sun Parlor of E. Parmelee Prentice, New York, Delano & Aldrich, Architects, New York
International Paper Co., Mills, at Niagara Falls, Palmer and Fort Edward, N. Y., and at Rumford Falls and Chisholm, Me.
N. Y. C. & H. R. R. R. Power-Stations, at Yonkers and Port Morris, N. Y., and N. Y. C. & H. R. R. R. Boiler Shops, at West Albany, N. Y., Reed & Stem, Architects, New York
Grand Central Terminal, New York City, Grand Central Terminal Architects, New York.
Sage Art Gallery, Menands, N. Y., William H. Miller, Architect, Ithaca, N. Y.
New York Edison Company's New Waterside Power-Station, New York, N. Y.
United States Navy Yards, at Norfolk, Charlestown, and Pensacola

Buffalo, Rochester & Pittsburg R. R. Office Building, Rochester, N. Y.
Maryland Institute, Baltimore, and Auditorium Building, Springfield, Mass., Pell & Corbett, Architects, New York
Brooklyn Rapid Transit Company Shops, Maspeth, L. I.
Tichenor-Grand Sales Stables, New York, Hill & Stout, Architects, New York
American Steel & Wire Company's Mill, Worcester, Mass.
C. K. G. Billings' Residence, New York, Guy Lowell, Architect, New York
N. Y., N. H. & H. R. R. R. Locomotive and Machine Shops, Readville, Mass.
Belt Conveyor Buildings, New Post Office, New York, and Bank of Montreal, Winnipeg, Man., McKim, Mead & White, Architects, New York.

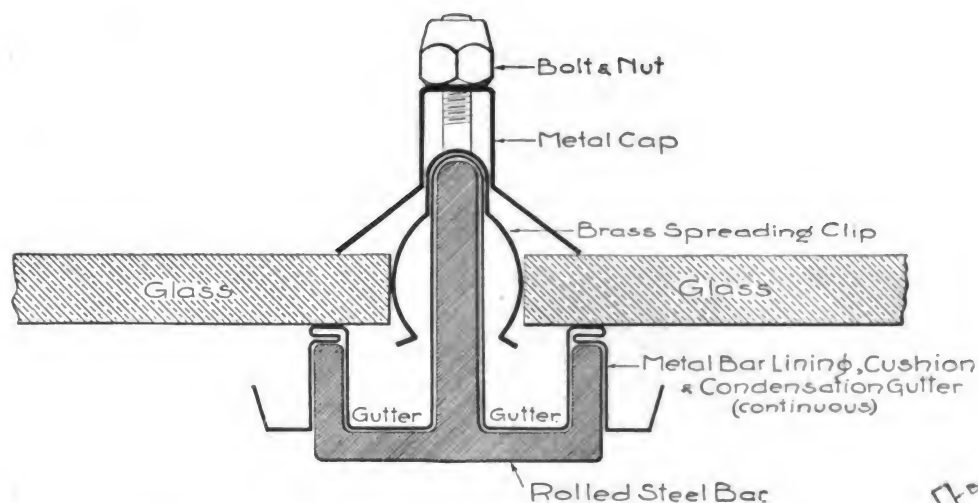


FIG. 2.—FULL-SIZE TRANSVERSE SECTION AT SKYLIGHT
SUPPORTING BAR
(Patents applied for)

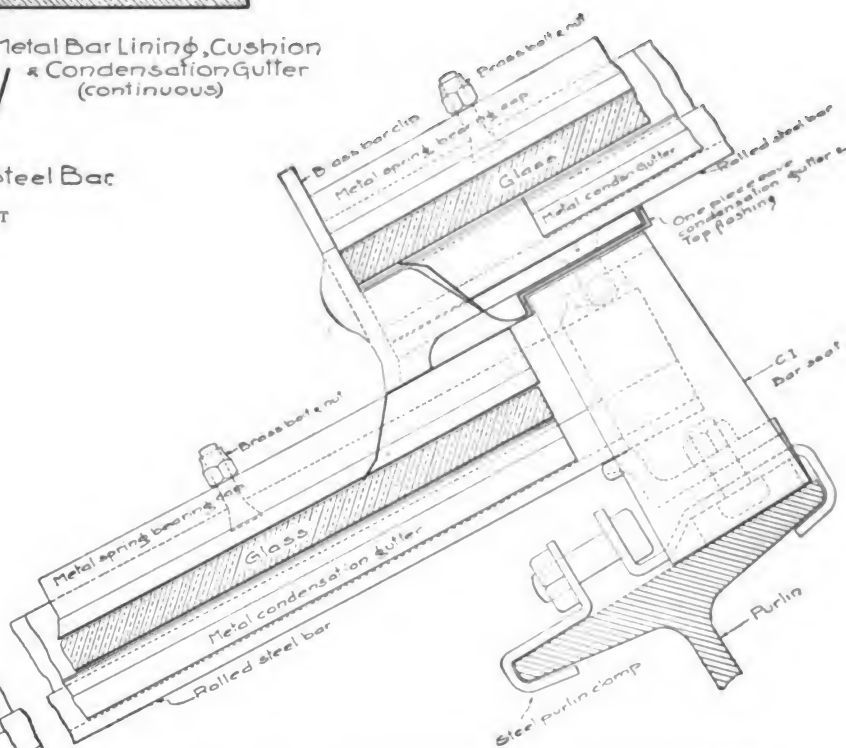


FIG. 3.—HALF-SIZE CROSS-SECTION FROM EAVE TO NEXT PURLIN
ABOVE
(Patents applied for)

Construction shown on the right side is repeated at each purlin between the eave and the ridge

the glass and supporting bars in line with the pitch of roof, all in the same direction.

Each light of glass shall be entirely independent of every other light, so that one light cannot support another; and the glass shall be held laterally in a manner to prevent its coming in contact with any rigid part.

The bearing for the glass shall be flexible, so as to adjust itself to any warps or irregularities of the glass along its bearing line.

The caps shall be spring-bearing in order to thoroughly conform along the lines of contact, when secured in position, to the surface of the glass.

All gutters shall be of copper and all exposed parts other than sheet metal shall be of brass.

The supporting bars shall be of rolled steel and shall be held in a loose manner at the upper end, and in a fixed manner at the lower end, by brass clips.

Packing, filling substance of whatever kind, or material other than glass and metal, shall not be used.

All skylight sheet-metal work shall be (specify copper, zinc, or galvanized iron).

The glass shall be $\frac{3}{8}$ inch thick (specify whether wire, plain or ribbed).

STANDARD SPECIFICATION, NEW MULTIPLE-UNIT SYSTEM PUTTYLESS SKYLIGHTS—All curb and roof flashings shall be included under heading "Sheet-Metal Work." They must be well connected, ready to receive the skylight work, and must include all necessary counter flashing, well secured and made water-tight.

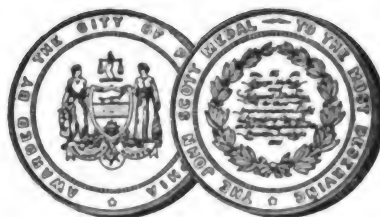
The skylights shall be of the puttyless type, of a design to allow for free expansion and contraction, or for movement due to vibration, of

"A.B.C." SYSTEMS

American 3-Way Prism Co.

Prismatic Lights for Pavement, Floor, Skylight, Store Front, Etc.

Main Office and Warehouse
CHICAGO, ILL.



MEDAL AWARDED BY THE CITY OF PHILADELPHIA

BRANCH OFFICES AND REPRESENTATIVES IN ALL LARGE CITIES

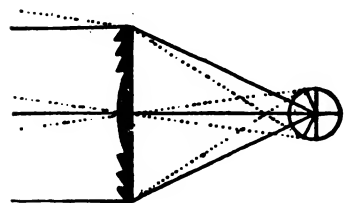
Eastern Office and Warehouse
NEW YORK, N. Y.

PRODUCTS—PRISM GLASS in the following varieties: a. 3-WAY PRESSED PRISM TILES; b. ORDINARY FLAT-BACK PRESSED PRISM TILES; c. 3-WAY SHEET PRISM GLASS; d. ORDINARY FLAT-BACK SHEET PRISM GLASS; e. 3-WAY WIRED SHEET PRISM GLASS; f. TRANSOM VENTILATORS with or without screens

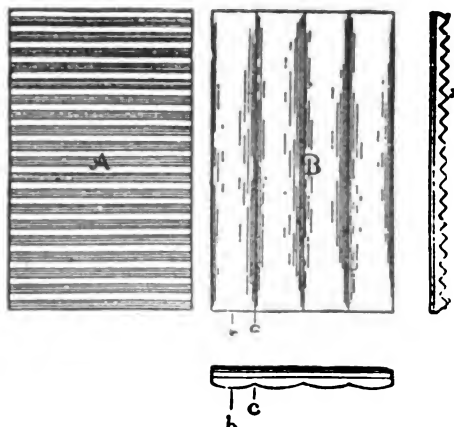
SIDEWALK LIGHT CONSTRUCTION, including "PASCHALL" INTERLOCKING SYSTEM with REINFORCED CONCRETE; SKYLIGHT CONSTRUCTION; SIDEWALK DOORS; VENT DOORS; COAL-HOLE COVERS; WATERTIGHT METAL EXPANSION JOINT, PLASTIC COMPOUND

3-WAY PRESSED PRISM TILE—The 3-Way Pressed Prism form of glass is scientifically constructed to collect the daylight from the side as well as from above, eliminating shadows, and project light into dark interiors. Its design consists of lens-cut surfaces running in a vertical direction on the outside (to gather whatever light may come from the side) at right angles to horizontal prismatic projections arranged on the inner side, to collect the overhead light. (See Figs. 1 and 2.) This glass is manufactured in various forms to suit all possible conditions. It will increase the strength of the daylight in any room from 50 to 100 per cent.

The above medal was awarded for this invention upon the recommendation of the Franklin Institute, copy of which will be sent upon application.



Fresnel Lens, conceded to be the most powerful Projecting Glass known to science for artificial light



3-Way Prisms, conceded to be the most powerful combination of glasses known to science for projecting and diffusing natural light

GLAZING—All glazing is done in hard-metal, coppered and sufficiently reinforced with invisible steel-cored bars to make the panes rigid. This is stronger than the ordinary stained glass leading, while the cost is no greater. Solid copper bar will be used when specified.

"A.B.C." SYSTEMS



FIG. 3—3-WAY PRISMATIC TILE

APPLICATION TO STORE FRONTS, ETC.—3-Way Prismatic Tiles, as shown in Fig. 3, are primarily adapted for store-front lighting; also for upper sashes of court windows to light offices, etc.

Ornamental dew-drop tile borders, inserted in the second row of tiles, all around, give a very finished effect to each pane.

Our 3-Way Tiles are made in 4- and 5-inch squares. They are pressed from the best quality of glass and made in a great many angles. The cost is a little greater than that of Sheet Prism, but they have the advantage of being more efficient and giving an ornamental appearance when installed in transoms and upper sash. See Fig. 4.

PRISM TILE CANOPIES—When existing conditions will not allow the use of Prism Tiles directly in the sash, then same can be set in Canopies, as shown in Fig. 6. They are guaranteed to give highly efficient results. Canopies are hung as shown in cut, or can be pivoted on brackets so as to revolve.

3-WAY SHEET PRISM GLASS—The prismatic design of this glass is in general the same as that of the pressed prisms, but so arranged that it can be readily cut and set in ornamental designs, with copper bars, as previously described.

In large single sheets it is especially adapted for use in Warehouses, Factories, School Buildings, Mills and other places where an ornamental appearance is not required but light is of first importance. We recommend only the upper sash being glazed, so that when windows are open there will be no interference with the rays from the prisms. This glass is much cheaper than tile, and its remarkably efficient lighting qualities will pay for the glass many times in the saving of artificial light bills. It can be furnished in lights up to 100 inches wide by 60 inches high. This glass we guarantee not to turn pink.

Continued on next page



FIG. 4—TRANSOM OF 3-WAY TILE WITH ORNAMENTAL DEWDROP TILE BORDER WITH VENTILATORS

We show here a few of the ornamental designs in which we furnish this glass.

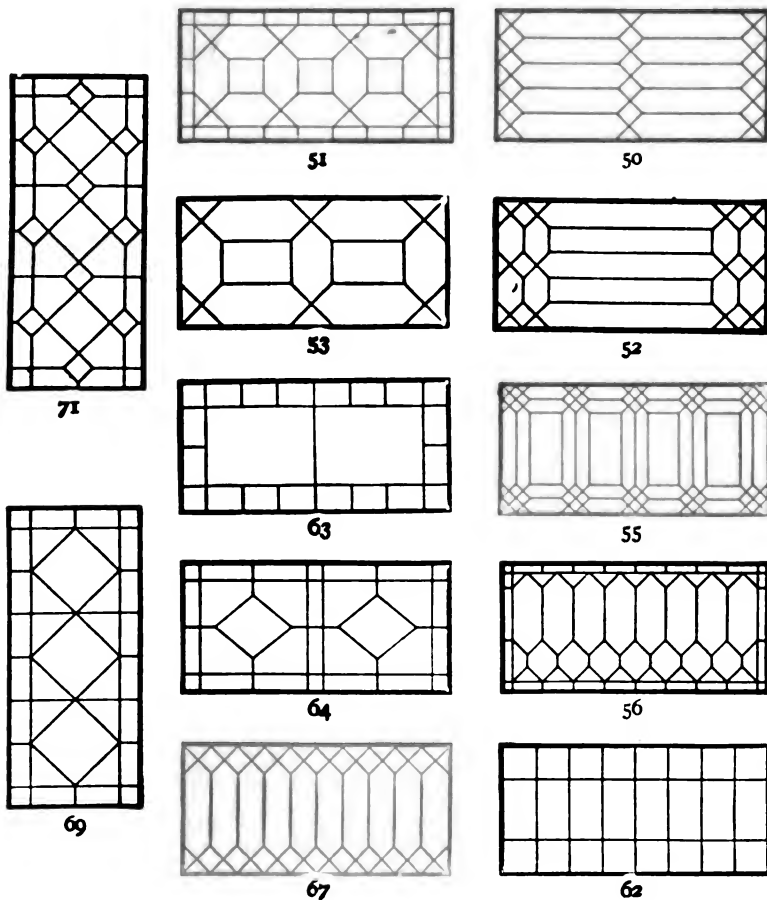


FIG. 5—ORNAMENTAL SHEET PRISM GLASS
In specifying, give Design Number or Special Drawing

"A.E.C." SYSTEMS



FIG. 6—3-WAY PRISM CANOPIES PLACED OUTSIDE OF WINDOW, DIFFUSING LIGHT THROUGHOUT THE ROOM

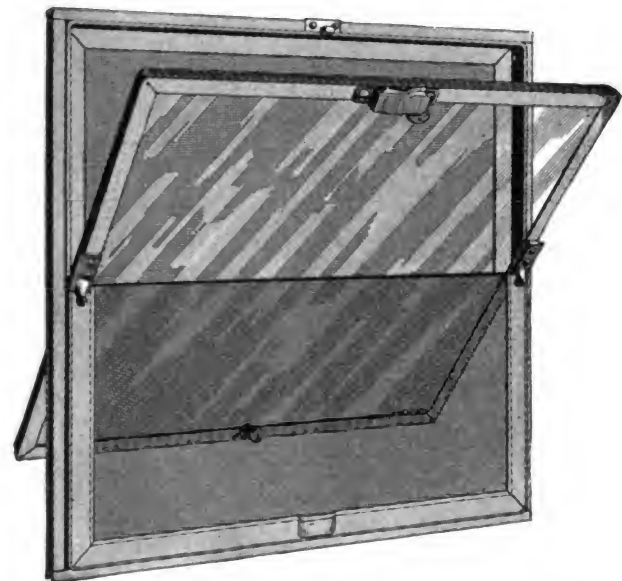


FIG. 7—VENTILATOR SHOWN WITH "PASCHALL" SCREEN

NEW SCREENED VENTILATOR—The "Paschall" Screen (Patent applied for) adds but little to cost of our ventilators bearing 3-Way Prism Transom Lights. A comparison with the old way of screening a transom ventilator will prove the superiority of our screen.



FIG. 8—OLD-STYLE BOWED OR BARREL SCREEN USED FOR VENTILATION

Continued on next page

3-WAY PRISMATIC WIRE GLASS—3-Way Prismatic Wire Glass can be furnished in lights up to 80 inches wide and 60 inches high. It embodies the features of the ordinary wire glass with the advantages of Prismatic Glass. It can be used in vertical sash, canopies, skylights and ceiling lights.



FIG. 9—REGULAR SHEET PRISM

SPECIFICATION FORMS — FOR PRISMATIC TILE—The windows and transoms marked on drawings "Prismatic Tile" shall be 3-Way Pressed Prism Tiles, size . . x . . , in electro-copper-plated bar setting, as manufactured by the American 3-Way Prism Company, of Chicago, Ill.

FOR SHEET PRISM GLASS—The window sash and transom lights marked on drawings "Prism Wire Glass" shall be 3-Way Prism Glass, in single panes (in ornamental design No. . . , or to design as shown on drawings, in electro-copper-plated bar setting), guaranteed not to turn pink, as manufactured by the American 3-Way Prism Company, of Chicago, Ill.

FOR PRISMATIC WIRE GLASS—The window sash and transom lights marked on drawings "Prism Wire Glass" shall be 3-Way Prismatic Wire Glass, as manufactured by the American 3-Way Prism Company, of Chicago, Ill.

ESTIMATES—When writing for estimates or requesting information on prismatic lights, kindly give the facts called for in the subjoined table, so that we may know fully the conditions to be met. 3-Way prisms are manufactured in various angles, each to meet a different condition.

DATA FOR ORDERING PRISMATIC LIGHTS

No. of Lights	Width	Height	Width of street to buildings opposite	Height of Building opposite opening in which prisms are to be installed.	Distance from top of window to ground	Distance from top of window to floor	Exposure, Does opening face North, South, East or West?	Width of Room	Length of Room	Height of Ceiling	Reveal. If glass is not flush with face of building, note distance from glass face of building

All lights glazed with ornamental border, unless otherwise ordered. Bent and tilted prism lights quoted special.

Measurements—Always give width first, then height, which is very important in prism glass.

Mail orders will be glazed with the right angle of prisms necessary to obtain the best results.

"PASCHALL" INTERLOCKING SYSTEM OF SIDEWALK LIGHTS—This system is composed of steel I sections pierced by flat cross bars, all set so as to form receptacles for the lights, as shown in Fig. 14. Cement will not bind well to an enameled, galvanized or painted surface. After the lights are set, the exposed iron work can be finished in white enamel or other painting or be bronzed.

Where specially desired we can furnish the iron work of our system either galvanized or enameled.

"A.B.C." SYSTEMS

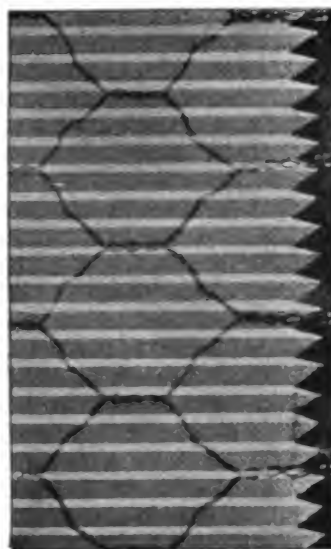


FIG. 10—WIRE SHEET PRISM



FIG. 11—NO. 44 3-WAY PRISM



FIG. 12—NO. 43 PLAIN LENS



FIG. 13—NO. 114 SINGLE PENDANT PRISM

The groove of the I bars being continuous from end to end, the glass light with its projecting flange all around its edge, together with the cement interlocking in such a manner that any separation of iron, glass or cement is impossible. It makes the whole construction absolutely watertight and practically a reinforced-concrete system.

STYLES OF GLASS USED—The cuts on this page show styles of glass used in sidewalk construction: No. 44, 3-Way Prism; No. 43, plain lens, and No. 114, single pendant prism. Nos. 44 and 43 can be furnished 1 inch thick to take care of extra heavy traffic.

We are now having made for us a special glass for sidewalk lights, trade-marked **Tanex**, which is used in all our work.



FIG. 14—THE "PASCHALL" VAULT-LIGHT CONSTRUCTION

Continued on next page

GREAT LIGHT AREA—One of the great advantages of the Paschall Interlocking Sidewalk Light Construction, in addition to its great strength, is its large glass area, approximately 77 per cent. on the underside and 50 per cent. on the surface of the total area. Other forms of construction average from 25 to 40 per cent. This Construction is not only economical in the first cost, but *saves its total cost* in a short time by the elimination of artificial light for day-time service.

3-WAY PATENTED EXPANSION JOINT—*This is the only joint that is absolutely watertight.* When sidewalk lights are set without proper expansion joints it is only a question of time before shaling and cracking of the glass and cement occur. The regular expansion joint that is now in common use is made by caulking the joint with oakum or similar material and then filling at top with a plastic compound, but owing to expansion and contraction this method causes more or less leakage at the joint. Knowing this, a great many cement pavement workers do not cut the joints all the way through; but as this fails to provide properly for expansion and contraction, the consequence is shaling of the glass and cracking of the cement. The accompanying illustrations show the manner in which we use it in setting our sidewalk lights construction. (See Figs. 15 and 16.)



THE JOINT
FIG. 15—3-WAY PATENTED WATERTIGHT EXPANSION JOINT

DETAIL—The Expansion Joint as shown above can be made with any metal (zinc or copper, preferred). The sheet metal connects sections otherwise entirely separate, by the two edges being bent and embedded in the concrete, which makes an absolute watertight joint. When contraction and expansion occur, the Expansion Joint opens or closes without breaking. These Expansion Joints are usually run at right angles with the building and should be placed about every four feet or less for the best results.



APPLICATION

PLASTIC COMPOUND—All our sidewalk light work is executed with perfectly annealed glass dipped in a highly heated plastic compound. Only perfectly annealed glass can successfully pass this test, which is a guarantee against shaling and cracking.

SPANS, WEIGHTS, PRICES—We can span our construction to any reasonable width without the use of cross supports by making the depth of the I as required. The average weight per square foot, set in place, is 25 lbs., and the price is \$2.00 per sq. ft., subject to discount and special quotations.

"A.B.C." SYSTEMS

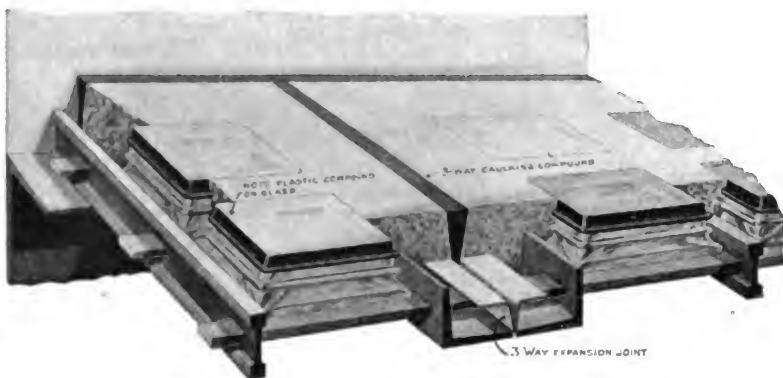


FIG. 16—PERSPECTIVE OF "PASCHALL" INTERLOCKING VAULT-LIGHT CONSTRUCTION, SHOWING EXPANSION JOINT



FIG. 17—WINE CELLAR

INSTALLATION—We furnish instructions to be followed when work is being set by others. Setting can be done by any regular cement pavement contractor, as follows:

"Make expansion joint first, placing our Expansion Joint in position where joint is desired, then insert wedge-shape wood strip in same to level of finish surface; see Fig. No. 15. Leave in position while cementing and allow to remain until the cement is thoroughly set, then remove and fill the opening with 3-Way Caulking Compound, or some other good compound, poured in hot."

Joints made as in Figs. 15 and 16 or joints made of metal of similar design, whether inverted or otherwise used, can only be furnished by us. We will furnish the Expansion Joint at a moderate cost to contractors or others who wish to use it in other ways. It can be used successfully in reinforced concrete work, such as in floors, roofs, etc.

Continued on next page

SPECIAL NOTICE—Our Expansion Joint is thoroughly covered by Patents, and action will be brought against all infringers.

CAUTION—To prevent cracking and shaling of glass and cement from expansion and contraction, joints must be provided.

SPECIFICATIONS—The sidewalk lights and floor lights shown on the plans shall be Paschall Interlocking Steel Construction with white enameled frames (galvanized, painted or natural iron frames, if desired), with 3-Way Prism Lights (or plain lens lights), manufactured by the American 3-Way Prism Company, Chicago, Ill., and shall be installed according to their instructions (or by their skilled workmen), with their metal expansion joint between panels.

SKYLIGHTS—Paschall Interlocking Skylight Construction made up with 7-inch square 3-Way Prisms or with plain lens lights is superior to any other system known for its great strength and large light area. Frames can be furnished in white enamel, galvanized, painted or natural iron, as desired.

SPANS, WEIGHT AND PRICES—We build these skylights in all forms known. The style is especially adapted for large lean-tos in the rear of stores, etc., as we can span up to 10 feet without cross supports. The weight averages 20 lbs. per sq. ft. The price, \$2.00 per sq. ft., subject to discount and special quotations.

COAL HOLE COVERS—Our new coal hole covers are made flush with the pavement and furnished with or without glass in mostly used stock sizes.



FIG. 18—COAL HOLE COVER

VENT DOORS—Our new vent doors are flush with the pavement and are made in, and form part of, our regular Sidewalk Light Construction.



FIG. 19—VENT DOOR



FIG. 20—"PASCHALL" INTERLOCKING SKYLIGHT CONSTRUCTION



FIG. 21—NO. 137 PLAIN LENS, 7 X 7-INCH SKYLIGHT TILE
6 X 6-INCH TOP



FIG. 22—FLUSH VAULT LIGHT DOOR

FIG. 23—FLUSH SIDEWALK DOOR

REINFORCED CONCRETE SIDEWALK LIGHTS—In our Reinforced Concrete Sidewalk Light Constructions we use various forms of lenses as per the following cuts: No. 343, No. 1, No. 2, No. 4. We are prepared to figure on this class of work set complete, in any part of the country.

We also manufacture **Sidewalk Light Slabs**. (Fig. 25.) These are made up in suitable-sized sections and shipped ready to set over openings. It is necessary to furnish blue prints or sketches showing bearing and exact sizes in which the slabs are to be made. This form of Sidewalk Light is particularly adapted to work that is at a distance from the source of supplies.

SIZES, WEIGHTS AND PRICES—The sizes of slabs are practically up to areas containing 25 square feet. The weight averages 25 lbs. per sq. ft. The price is about \$1.25 per sq. ft., subject to discount and special quotations. The strength is equal to all building law requirements and can be made anything necessary to meet special requirements.

SPECIFICATIONS—The sidewalk lights shown on the plans shall be of reinforced-concrete construction and filled with No. ... lenses. All as manufactured by the American 3-Way Prism Company of Chicago, Ill. (Mention whether slabs or setting at building is required.)

GUARANTEE—We guarantee all the workmanship and material in our products.

FACILITIES—With a thoroughly up-to-date modern plant, we are in a position to fill the largest orders and ship them to any part of the United States, Canada or Mexico.

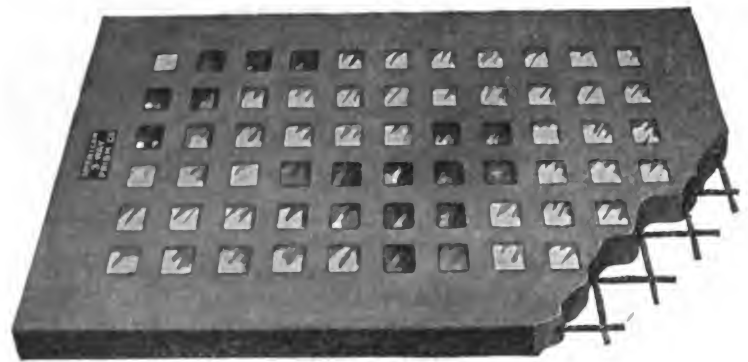


FIG. 25—SIDEWALK LIGHT SLAB OF REINFORCED CONCRETE

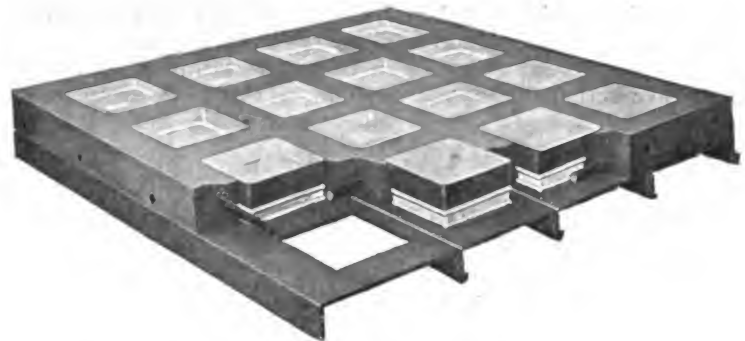


FIG. 26—3-WAY QUICK-SET SYSTEM OF SIDEWALK LIGHTS

3-WAY QUICK-SET SYSTEM OF SIDEWALK LIGHTS

—Quick-set sidewalk light construction is made up of a series of interlocking units made of high-carbon heavy sheet steel, galvanized, with openings regularly punched to receive glass, and rods placed to properly reinforce the concrete. Specify by number the glass best suited to requirements.

STYLES OF LENSES—For Reinforced Concrete Lights and the Quick-set System we use the lenses described below:

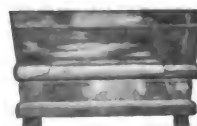
Glass No. 1 is the standard plain square lens used to diffuse the light directly below. Being square, it affords the greatest light area. It is $2\frac{1}{8}$ " square and $1\frac{1}{8}$ " deep.

Glass No. 2 is the standard 3-way prism glass for refracting the light downward and backward into basements. It is scientifically designed with a series of three prisms set at different angles. This is the best form of prism glass.

Glass No. 4 is the standard square pendant prism. It is $2\frac{1}{8}$ " square, $1\frac{1}{8}$ " deep and has a pendant $2\frac{1}{2}$ " long.



GLASS NO. 343



GLASS NO. 1



GLASS NO. 2



GLASS NO. 4



FIG. 24—AN INTERESTING TEST OF THE "PASCHALL" INTERLOCKING SYSTEM OF VAULT LIGHTS

CATALOGS, SAMPLES—The American 3-Way Prism Company is at all times pleased to forward to Architects, Contractors and others, upon request, special catalogs, price list, samples, etc., of its products, or to give them any other assistance desired.

American Luxfer Prism Company

CHICAGO, 1605 Heyworth Building
BOSTON, 49 Federal Street
CLEVELAND, 419-20 Citizens' Building
BALTIMORE, 812 Equitable Building
DULUTH, 106 West Michigan Street
INDIANAPOLIS, 7 East Market Street

KANSAS CITY, 948 N. Y. Life Building
MILWAUKEE, Stroh Building
NEW YORK, 507 West Broadway
NEW ORLEANS, 904 Hennen Building
PITTSBURGH, 1222 Fulton Building
PHILADELPHIA, 411 Walnut Street

ROCHESTER, 38 Exchange Street
ST. PAUL, 615 Ryan Building
MINNEAPOLIS, 507 Andrus Building
DALLAS, Builders' Exchange
SAN FRANCISCO, 445-47 Turk Street
LOS ANGELES, 1701 North Main Street

PRODUCTS—The Luxfer System comprises LUXFER TRANSOM AND WINDOW PRISMS, CANOPY AND SKYLIGHT PRISMS, FLOORLIGHT PRISMS, CEILING LIGHT PRISMS, SHEET PRISMS, LUXFER SIDEWALK TILE AND PRISMS, VAULT LIGHTS, AND REINFORCED CONCRETE SIDEWALK LIGHTS

LIGHTING DARK BUILDINGS WITH DAYLIGHT—The Luxfer is the original daylighting system combining those essentials whereby results can be pre-determined. The principle of directing the rays of daylight, so that none are wasted, is practical only with Luxfer Prism systems, and is so recognized by Architects and Builders everywhere.

SCIENTIFIC ACCURACY—Luxfer Prisms are of scientific accuracy, being designed by the leading refractionists of the world; they are absolutely correct as to angles, and are made of the finest quality pressed crystal glass.

INSTALLATION—Luxfer 4-inch Tiles for transoms are glazed into any size panels to fit the openings, and can be set by any workman. Luxfer Sidewalks are either set at the building by our own skilled mechanics or made up into slabs to fit the openings, and shipped ready to set. This is a simple and inexpensive method.

SERVICE—Our organization covers the entire country, which enables Architects and Builders to secure equal service from any of our offices. Experts in daylight illumination will gladly co-operate with you upon any problem and their advice and assistance is cheerfully given.

CANOPIES—Are valuable where the direct admission of light is prevented by high adjoining structures. Luxfer Prism Canopies constitute an admirable medium for daylighting a dark interior. They are set at an angle to the wall, and are supported in revolving, folding or stationary frames.

SPECIFY: "Luxfer Prism Canopies to be installed at all windows not getting direct daylight."

LUXFER NO. 76 PRISM CUSHION PROTECTED GLASS—This is the most desirable form of sidewalk light construction, combining effectiveness of illumination with

great durability. A waterproof special composition cushion surrounds each unit of glass, which allows free expansion and contraction, and prevents shaling and breaking that are common faults in ordinary methods. We set these at the building or make them in slabs at factory and ship, glazed complete, to fit any opening.

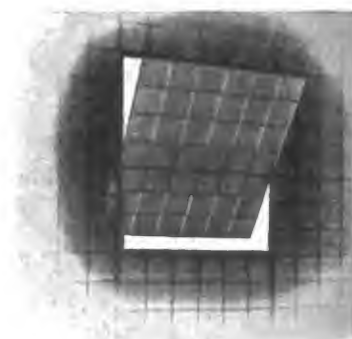
SPECIFY: "Luxfer No. 76 Prism (or No. 78 Lens) Cushion Protected Glass."

LUXFER NO. 98 SKYLIGHT AND FLOORLIGHT—This is a specially designed construction to meet the demands for a Reinforced Concrete Rooflight, Floorlight and Skylight.



capable of carrying any requirement of floor or roof load, yet having a greatly increased glass area. Heavy Crystal Glass Units, 6½ inches square and 1¼ inches thick, in Reinforced Concrete Construction, Luxfer System, Twisted Rods running longitudinally and transversely. Set at the building or made in slabs at factory and shipped, glazed complete, to fit any opening.

SPECIFY: "Luxfer No. 98 Skylight and Floorlight."



LUXFER TILE PRISM STORE FRONTS—Invaluable for daylighting dark stores. The prisms are four-inch squares of pressed crystal glass, glazed by our standard method, producing an absolutely air- and water-tight panel, and may be fitted with ventilators, as shown above.

SPECIFY: "Glaze all transoms and top lights on floors as shown, front, sides and rear elevations, with Luxfer Prism four-inch pressed tile, electro copper-plated glazing and ornamental borders."



"A.B.C." SYSTEMS

CLASSIFICATION PAGE OF
SECTION 16

Sheet-Metal Work and Products

(Sheet-Metal Beams, Studding, Furring, Lath see Section 12)

Section Synopsis

A. SHEET-METAL PLATE FOR ROOFING, ETC. Steel and Charcoal-iron Roofing Tin (Terne Plate) and Bright Tin; Steel Standing-seam Sheet Roofing; Galvanized Iron; Corrugated Iron; Asbestos-covered Plates; Toncan Plates; Monel Plates; Ingot Iron Plates; Sheet Copper, Zinc, Lead, Aluminum, etc., for metal roofing and other purposes; Roofing Work Contracting

B. ARCHITECTURAL WORK. Cornices, Trim, Snow Guards, Siding, Shingles; Gutters, Leaders, Crestings, Finials, Ridges, Hip Rolls; Sundries; Metal Ceilings and Wainscoting; Stamped Ornament; Statuary; Enameled and Marbleized Metal Tile and Trim

Cold-rolled, Cold-drawn and Pressed Metal Moldings for all architectural purposes

C. Skylights, sheet-metal and combination styles; Turret Sash Operators; Scuttle Openers; Roof Ventilators; Chimney Cows

D. Standard (Underwriters') and General Fireproof Window Frames and Sash, Shutters, Doors, Trim, Partition, Elevator Enclosures, etc., all-metal and metal-clad; Pressed Sheet-metal Factory and Warehouse Sash

E. General Sheet-metal Work, for boilers, heating and ventilation; Boiler Breechings, Smoke Stacks, Ducts, Chutes; Spiral Pipe; Tanks, iron, copper, zinc, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX			REGULAR CLASSIFICATION	
A	1	Plate for roofing, sheet-metal work, etc.:—	35	Gutters, leaders, elbows, boots
	2	Asbestos-covered plates, roofing, siding, interior finish, etc.	36	Metal ceilings and wainscoting, stamped sheet-steel
	3	Black plates, steel, charcoal-iron	37	Ornament, stamped and cast zinc, copper, etc.
	4	Bright tin	38	Roof shingles, tiles, all metals
	5	Continuous roofing	39	Roof trimmings, ridge roll, hip roll, etc.
	6	Formed roofing and siding	40	Snow guards
	7	Galvanized iron, flat, corrugated	41	Statuary, stamped zinc
	8	Ingot-iron plates	42	White-enameled and marbleized tile for wainscoting, etc.
	9	Monel-metal plates	C	55 Chimney cows
	10	Planished iron sheets		56 Glass-top roof ventilators, combination skylight
	11	Polished steel sheets		57 Roof ventilators, all designs, galvanized iron, copper
	12	Steel sheets, large		58 Scuttle openers, patent
	13	Toncan-metal plates		59 Skylight turret sash operators:—
	14	Roofing tin (terne plates):—		60 Gear-type
	15	Bessemer process		61 Special mechanism
B	16	Charcoal-iron		62 Skylights:—
	17	Open-hearth hammered		63 Standard make and styles, sheet metal and combination
		Roofing work:—		64 Special construction, puttyless, etc.
		Flat-soldered and standing-seam work in tin plate, galvanized iron and sheet steel plate		65 Ventilated ridging
		Sheet brass, copper, zinc, lead, aluminum, etc.	D	75 All-metal joinery, steel, brass, bronze and copper:—
	30	Architectural moldings for all purposes:—		76 Dumbwaiter doors
	31	Cold-rolled, steel, brass, copper, bronze, etc.		77 Elevator cars interior finish and doors
	32	Cold-drawn, steel, brass, copper, bronze, etc.		78 Elevator enclosures and doors
	33	Pressed, steel, brass, copper, bronze, etc.		79 Front and vestibule doors, mausoleum doors and sash, steel, bronze
	34	Special-process, steel, brass, copper, bronze, etc.		80 Trim, wainscoting, partitions, etc.
		Architectural sheet-metal work for exterior finish, siding, shingles, trim, cornices, dormers, etc., tin, galvanized iron, copper		81 Underwriters' and general fireproof windows, doors, shutters
				82 Metal-clad joinery, steel, brass, bronze and copper:—
				83 Dumbwaiter doors
				84 Fire doors
				85 Trim, wainscoting, partitions, etc.
				86 Underwriters' and general fireproof windows, doors, shutters
E	95	Heavy sheet-metal work:—	SPECIAL CLASSIFICATION	
	96	Boiler breechings		
	97	Chutes, ducts, pipe, all purposes		
	98	Heating and ventilation work		
	99	Smoke pipe		
	100	Spiral pipe, all uses	Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
		Tanks, all metals		
	121	Ash and garbage, etc., receptacles (S. 19 C)		
	122	Brass thresholds (S. 15 A)		
	123	Metal wardrobes, lockers, telephone booths, medicine cabinets, etc. (S. 40 A)		
	124	Oil filters and steam exhaust heads (S. 28 C)		
	125	Sheet-metal lath, punched and formed, corner beads, clips, etc. (S. 12 A)		
	126	Sheet-metal lumber, beams, studding, furring (S. 12 B)		
	127	Soot doors, cellar window chutes, etc. (S. 18)		
	128	Special sheet-steel fabric, for floors and partitions (S. 12 B)		
	129	Steel panelboard cabinets (S. 30 B)		
	130	Wall ties, or brick bonds, wall plugs, etc. (S. 18)		

TRADE NAMES AND BRANDS					
"A P M," asbestos-covered plates, Catalog A 3					
"American Numethod," terne-roofing plates					
"Apollo Best Bloom," galvanized iron sheets					
"Cambridge," rigid reversible metal lath					
"M-F," terne plates					
"Banfield Process," roofing tin					
"Keystone," roof ventilators					
"Scott's Extra-Coated," roofing tin					
"Security," wall ties					
"Burt," roof ventilators, Catalog C 2					
"Carnahan's," IX charcoal iron old style tin plate, Catalog A 4					
"Clason," wire snow guards					
"H-B," wire snow guards					
"Crimpedge," eavestrough conductor pipe					
"Invisible Joint," steel ceilings					
"Nu-Air," roof ventilators					
"Titelock," metal shingles					
"Dahlstrom," patent hollow-metal doors, Catalog D 1					
"Dux-Bac," metal roofing tile					
"Konical," steel roof or chimney ventilators					
"Perfect-Fit," steel ceilings					
"Globe," ventilators, chimney cowl and ventilated ridging, Catalog C 1					
"Lee," roof ventilators and hollow-metal windows, Catalog C 3 & D 3					
"Target-and-Arrow," roofing tin					
"Taylor's Old Style," roofing tin					
"Thorp Richardson," metal-clad fireproof doors and trim, etc., Catalog D 2					
"Universal," window sash and doors, S. 11, Catalog 6					

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
B 1	Clason Architectural Metal Works Providence, R. I.	16 17	34 35 40 55 57	61 80		
D 1	Dahlstrom Metallic Door Co. Jamestown, N. Y.	30	31 32 33	75 76 77 78 79 80	123 129	
B 3	Eller Manufacturing Co., The Canton, Ohio	4 5 16 17	34 35 36 37 38 39 57	61		
A 5	Follansbee Brothers Co. Pittsburgh, Pa.	2 15	57		122 130	
C 1	Globe Ventilator Co. Troy, N. Y.		56 57	63		
C 3	Lee, Thomas Cincinnati, Ohio		56 57			
D 3	Lee, Thomas Cincinnati, Ohio			80 82		
B 2	Milwaukee Corrugating Co. Milwaukee, Wis.	4 5 16 17	34 35 36 37 38 39 57	61 63		

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
A 2	American Sheet and Tin Plate Co. Pittsburgh, Pa.	2 3 4 5 6 7 9 10 11 13 15	39			125
A 3	Asbestos Protected Metal Co. Beaver Falls, Pa.	1				
C 2	Burt Manufacturing Co., The Akron, Ohio		56 57	61		124
A 4	Carnahan Tin Plate & Sheet Co. Canton, Ohio	2 14				

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
D 4	Pomeroy Co., S. H., Inc. New York, N. Y.			80		
A 1	Taylor Co., N. & G. Philadelphia, Pa.	2 3 7 16				
D 2	Thorp Fireproof Door Co. Minneapolis, Minn.	30	31 32	81 82 83 84		
SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.						
Canton Foundry & Machine Co., The S. 37, Cat. 1. (Conductor connections)						
Des Moines Bridge & Iron Co. S. 35 F, Cat. 4 (Coal chutes)						
Electric Welding Co. S. 11, Cat. 6 (Steel window sash and doors)						
Kawneer Manufacturing Co. S. 22, Cat. 1 (Cold-rolled and drawn metal weldings)						
Keepsdry Construction Co., The S. 15 B, Cat. 1 (General sheet metal work)						
Mannen & Esterly Co., The S. 36 B, Cat. 1 (Architectural sheet metal work, skylights, leaders, etc.)						
National Lead Co. S. 35 A, Cat. 1 (Sheet lead)						
Variety Mfg. Co. S. 17 A, Cat. 3 (Underwriters' fire doors)						

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
Abendroth & Root Mfg. Co... New York, N. Y.				99		Canton Steel Ceiling Co..... New York, N. Y.		36				Galesburg Cornice Works.... Galesburg, Ill.		34 57	61 62		
Ackroyd & Sons, James..... Albany, N. Y.		34 59	61 62			Case & Co., Levi..... Schenectady, N. Y.	2 3 6 12 16 17	34 40 57				Garry Iron & Steel Co..... Niles, Ohio	2 6	36 38 57			
Acme Sheet Metal Co..... Martins Ferry, Ohio		36										Garsen Bros..... Johnsburg, Pa.		55 57			
Allegheny Steel Co..... Brackenridge, Pa.	7					Central Metal & Supply Co.... Baltimore, Md.	17					Gedge Bros. Iron Roofing Co.. Anderson, Ind.	6 12	35 36			
American Metal Ceiling Co... Brooklyn, N. Y.		36			125 126 130	Coe & Co., James A..... Newark, N. J.	2 3 6 12	35				Geel Hardware Co., Frank.. Sheboygan, Wis.	3 6 12	34 38 57	61 62 80		
American Metal Door Co... Jamestown, N. Y.			79 80			Consolidated Sheet Metal Works Milwaukee, Wis.		34	61			Gerock Bros. Mfg. Co..... St. Louis, Mo.		34 37 41			
American Metal Stamping Co. Germantown, Pa.		42		96	125	Cortright Metal Roofing Co.. Philadelphia, Pa.		38				Gille Mfg. Co..... Kansas City, Mo.	2 3 6 16	35			
American Rolling Mill Co... Middletown, Ohio	2 6					Demmler Bros. Co..... Pittsburgh, Pa.	2 3 6 7 16	35				Goff, Horner & Co., Ltd.... Pittsburgh, Pa.	2 3 6 7	36 38 57			
Austin & Doten..... Boston, Mass.	2 3 6 12	35 57		99		Deutz & Bros., A..... Laredo, Tex.		35				Hayes Co., George..... New York, N. Y.			80		
Autoforce Ventilating Sys- tem Boston, Mass.		57				Douglas, George B..... New York, N. Y.			80			Howell & Lawrence..... New York, N. Y.			82 83 84		
Baily & Co., R. M..... Philadelphia, Pa.	2 7			96	128	Dowman-Dozier Mfg. Co.... Atlanta, Ga.	3 6 16	34 35 36 38 57	61 80			Hungerford Brass & Copper Co., U. T. New York, N. Y.	17	35 57		100	
Baltimore Copper, Smelting & Rolling Co. Baltimore, Md.	17					Duluth Corrugating & Roof- ing Co. Duluth, Minn.		34 36 38	61 62 78 80 83			Hyndman Roofing Co..... Cincinnati, Ohio	1 6	35 38 57	61		
Bayonne Casting Co..... Bayonne, N. J.	8											Indianapolis Corrugating Co.. Indianapolis, Ind.		34 36	61 62		
Belknap Hardware & Mfg. Co. Louisville, Ky.	3 6	36 38 57				East Birmingham Iron Roof- ing & Corrugating Co.. Birmingham, Ala.	6 16	38				Inland Steel Co..... Chicago, Ill.	2 6				
Berger Bros. Co..... Philadelphia, Pa.		35 40 57		99		Edwards Mfg. Co..... Cincinnati, Ohio	2 3 6 16 17	34 35 36 37 38 40 55 57	61 62 78			Irwin Mfg. Co., Thos. W.... Pittsburgh, Pa.			61 62		
Berger, Leander D..... Philadelphia, Pa.	3 6 7 12	34 35 37 40 55 57	61 62	99		Ellis, A. J., Inc..... West New York, N. J.			79 80	123		Janney, Semple, Hill & Co.. Minneapolis, Minn.	2 3 6 16	35 57			
Berger Mfg. Co..... Canton, Ohio		36				Empire Iron & Steel Co..... Niles, Ohio	2 3 6	35 36 38 57	61 62			Jolley & Co., J. H..... Philadelphia, Pa.	8 17	34		100	
Biersack-Niedermeyer Co... Milwaukee, Wis.		34	61			Faitoute Iron & Steel Co.... Newark, N. J.	2 3 6 7 12 17		100			Jordan, R. C..... Ottawa, Ill.	16	35 36			
Braun, J. G..... Chicago, Ill.			61 62 78 79 80			Farwell, Ozmun, Kirk & Co.. St. Paul, Minn.				96 97	121	Kanneberg Roofing & Ceiling Co. Canton, Ohio	6 12 16	34 35 36 40 57	61 62		
Brown-Wales Co..... Boston, Mass.	2 3 6 7 16	35 40 57				Fitz, Dana & Brown..... New York, N. Y.	2 3 6 7 8 12 17	34 35				Keighley Metal Ceiling & Mfg. Co., N. Pittsburgh, Pa.		36		123	
Bruce & Cook..... New York, N. Y.	2 3 6 16 17	35 38 40 57		125		Folsom Snow Guard Co..... Boston, Mass.		40				Kinnear Mfg. Co..... Columbus, Ohio			62		
Burton Co., W. J..... Detroit, Mich.	6	34 36 38 57	61 80			Frankfurth Hardware Co., Wm. Milwaukee, Wis.	2 3 6	34 35 38				Kinnear & Gager Mfg. Co.. Columbus, Ohio		36 42	61 80		
Canton Art Metal Co..... Canton, Ohio		34 36 57	61 62			Friedley-Voshardt Co..... Chicago, Ill.	2 3 6	37	100			Klager Mfg. Co..... Dubuque, Iowa	3 6 16 17	35 36 37 38 57	61		

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
Lawson Co., F. H..... Cincinnati, Ohio	12 17	35 38 57				Osborn Co., J. M. & L. A.... Cleveland, Ohio	2 3 6 7 16 17	35 36 38 40 57				Seavey Hardware Co..... Fort Wayne, Ind.		34 35 36 37 55 57	61 80	100	
Lehmer Co., Joseph R..... Omaha, Neb.	3	57										Sel & Co., Benjamin..... New York, N. Y.	2 3 6 12	55 57			
Lloyd, George H..... Boston, Mass.	2 6 12	34				Pacific Metal Works..... San Francisco, Cal.	3 17					Sheet Metal Mfg. Co..... Niles, Ohio.	2 3 6	34 36 57	61 62		
Lyles & Mills Metal Ceiling Co. New York, N. Y.		36 42				Peter & Bros., F. N..... Newside, Pa.		40				Shepard Supply Co..... Charleston, S. C.	3	34 35 57	61		
Lyon, Conklin & Co., Inc.... Baltimore, Md.	2 3 6 7	34 38 40 57				Phillips Sheet & Tin Plate Co. Weirton, W. Va.	2 3					Stark Rolling Mill Co..... Canton, Ohio	12	39			
						Pidgeon-Thomas Iron Co.... Memphis, Tenn.	7	34 36 38	61			Sticher Hardware Co..... Reading, Pa.	2 6 12 17	40 57			
McFarland & Co., J. C..... Chicago, Ill.		34 62 78 80	61			Pike & Heald Co..... Manchester, N. H.	12 16 17	35				St. Paul Roofing, Cornice & Ornament Co. St. Paul, Minn.	6 16	32 34 35 36 37 38 57	61 62 80		
Machwirth Bros. Co..... Buffalo, N. Y.		57 80	61			Porter Iron Roofing & Cor- rugating Co. Cincinnati, Ohio	2 3 6 16 17	34 35 36 37 38 40 57	61 62 80			Sykes Metal Lath & Roofing Co., Niles, Ohio	6		78 80		
Mack Co., W. A..... Lowell, Mass.		34 57	61 62			Prescott & Son, J. B..... Webster, Mass.	18					Sykes Co..... Chicago, Ill.	6	34 57	80		
Martin Metal Manufacturing Co. Wichita, Kansas		34 35 37	61 62 80			Providence Architectural Iron Works Providence, R. I.		34	61			Tiffin Art Metal Co..... Tiffin, Ohio	3 6 16	34 35 36 37	61 62 80	98 100	
Merchant & Evans Co..... Philadelphia, Pa.	2 3 7 16					Pullman Consolidated Auto- matic Ventilator Co. York, Pa.		57									
Mesker & Co., George L..... Evansville, Ind.		34 38 57	80			Rasner & Dinger Co..... Pittsburgh, Pa.			84			United States Metal Prod- ucts Co. New York, N. Y.		32 34 36 37	79 80		
Meurer Bros. Co..... Brooklyn, N. Y.	3 6 7	38 40 57		125		Reeves Mfg. Co..... Canal Dover, Ohio	2 3 6 12 16	34 36 38				Vacuum Ventilator Co..... Boston, Mass.		57			
Milwaukee Artistic Metal Ceiling Co. Milwaukee, Wis.		36 38 57				Republic Metalware Co..... Buffalo, N. Y.	2 3 6 7 17	35 36 37 57			121	Valley Cornice & Slate Co., Ltd. Saginaw, Mich.		34 38 57	61		
Montross Metal Shingle Co... Camden, N. J.		38				Richards & Co., Inc..... Boston, Mass.	2 3 6 8 12	35 37				Van Norden Co., E..... Boston, Mass.		34 35 38 57 59	61		
						Riter Bros. & Co..... Philadelphia, Pa.	2 3 6 12 17	40 57				Washington Tin Plate Co.... Washington, Pa.	3				
National Enameling & Stamping Co. New York, N. Y.	6			121		Roberts Co., F. K..... New York, N. Y.	2 3 6 16 17	34 38 40 57 59				Weis Cornice Co., Henry.... Kansas City, Mo.		34			
National Sheet Metal Roofing Co. Jersey City, N. J.		38	61 62			Robertson Steel & Iron Co., W. F. Cincinnati, Ohio	3					Wheeling Corrugating Co.... Wheeling, W. Va.	2 3 6 16 17	35 36 38 57			
New Orleans Roofing & Metal Works New Orleans, La.		34 37 38	61			Royal Ventilator Co..... Philadelphia, Pa.		57	61			Wheeling Metal & Mfrs Co.... Wheeling, W. Va.	6 12	34 35 36 38 57 59	61 62		
New York Iron Roofing & Corrugating Co..... Jersey City, N. J.	6	34 36 57				Scott Roofing & Mfg. Co.... Cincinnati, Ohio	2 3 6 10 17	42 45 46 47 48 49	61 62 80		125	Wrightsville Hardware Co.... Wrightsville, Pa.		40			
New York Metal Ceiling Co.. New York, N. Y.		36 42				Sully Steel & Iron Co..... Chicago, Ill.	2 6					Youngstown Sheet & Tube Co. Youngstown, Ohio	6				
Niles Iron & Steel Roofing Co Niles, Ohio	3 6	36															
Norman Sheet Metal Mfg Co., W. F. Navado, Mo.		34 36 38															
Northrop, Coburn & Dodge Co. New York, N. Y.		36															
Northwestern Roofing, Cor- nice & Stamping Works Minneapolis, Minn.		34 37 39 57	61 62														
Norvell-Shapleigh Hardware Co. St. Louis, Mo.		55 57															
Ogden & Wallace..... New York, N. Y.	2 3 6																

N. & G. Taylor Company

Established 1810

Manufacturers of Tin Plate of All Kinds

General Offices

PHILADELPHIA, PA.

Works
CUMBERLAND, MD.

Works
PHILADELPHIA, PA.

PRODUCTS—ROOFING TIN AND BRIGHT TIN OF ALL KINDS. LEADING BRAND OF ROOFING TIN: TAYLOR'S "TARGET AND ARROW," FORMERLY KNOWN AS "TAYLOR'S OLD STYLE"

TECHNICAL DESCRIPTION—"Target and Arrow" Roofing Tin—the old-time extra-heavily coated, strictly hand-made tin plate that we have been selling for more than sixty years. Oldest brand on the market. Value as a permanent roofing material proven by long service. Registered trade mark embossed on each sheet. We were the first to stamp tin plates in this manner, many years ago, for the protection of the buyer.

ADVANTAGES OF TIN ROOFING—Light weight (65 lb. per 100 square feet); clean and neat, and easily applied; if damaged, permanent repairs can be made quickly and cheaply; not affected by heat or cold; gives complete protection against storms, fire, and lightning; great durability, roofs of our tin commonly outlasting the buildings they cover.



This trade mark
(Reg. in U. S. Pat. Off.)
embossed on each sheet

COST—Moderate cost, about 10 to 12 cents per square foot for the finished roof.

DELIVERY—Readily obtained direct from our stocks in warehouses at important distributing points. This brand also carried by wholesale hardware supply houses in all large cities. Name of nearest agent or dealer sent on request.

SPECIFICATIONS

A Standard Tin Roofing Specification for Architects' use follows herewith:

TIN ROOFING WORK—All tin used on this building shall be N. & G. Taylor Co.'s "Target and Arrow" brand. No substitute for this brand will be allowed. Use IX thickness for the roof proper, decks, etc., and IX thickness for valleys, gutters and spouts, as required by design. One coat of red lead, iron oxide, metallic brown or Venetian red paint, with pure linseed oil, shall be applied to the under side of the tin before laying.

FOR FLAT-SEAM ROOFING—Edges of sheets to be turned one-half inch; all seams to be locked together and well soaked with solder. Sheets to be fastened to the sheathing boards by cleats spaced eight inches apart, cleats locked into the seams and fastened to the roof with two one-inch barbed wire nails; no nails to be driven through the sheets.

FOR STANDING-SEAM ROOFING—Sheets to be put together in long lengths in the shop, cross-seams to be locked together and well soaked with solder; sheets to be made up the narrow way in the rolls and fastened to the sheathing boards by cleats spaced one foot apart.

VALLEYS AND GUTTERS—To be formed with flat seams well soldered, sheets to be laid the narrow way.

FLASHINGS—To be let into the joints of the brick or stone work, and cemented. If counter-flashings are used, the lower edge of the counterpart shall be kept at least three inches above the roof.

SOLDER—To be of the best grade, bearing the manufacturer's name, and guaranteed one-half tin and one-half lead—new metals. Use only rosin as a flux.

CAUTION—No unnecessary walking over the tin roof or using same for storage of material shall be allowed. In walking on the tin, care must be taken not to damage the paint nor break the coating of the tin. Rubber-soled shoes or overshoes should be worn by the men on the roof.

PAINTING TIN WORK—All painting of the tin work to be done by the roofer, using red lead, iron oxide, metallic brown or Venetian red paint, with pure linseed oil—no patent dryer or turpentine to be used.

All paints to be applied with a hand brush and well rubbed on. Tin to be painted immediately after laying. A second coat shall be applied in a similar manner two weeks later.

No deviation from these specifications shall be made unless authority is given in writing by the Architect. Only a first-class roof will be accepted.

Illustrative descriptive literature and samples will be sent to anyone interested in the roofing question.

American Sheet and Tin Plate Company

Manufacturers of

Sheet and Tin Mill Products of Every Description

GENERAL OFFICES, FRICK BUILDING

PITTSBURGH

District Sales Offices

CHICAGO CINCINNATI DENVER DETROIT NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH ST. LOUIS

District Sales Offices

Export Representatives: United States Steel Products Company, New York City

Pacific Coast Representatives: United States Steel Products Company, Los Angeles, Portland, San Francisco, Seattle

PRODUCTS—BLACK SHEETS FOR ALL PURPOSES; AMERICAN BESSEMER AND AMERICAN OPEN HEARTH STEEL SHEETS; PATENT PLANISHED IRON SHEETS; POLISHED STEEL SHEETS; SPECIAL SHEETS; APOLLO BEST BLOOM, AND CHARCOAL HAMMERED BLOOM GALVANIZED-IRON SHEETS; AMERICAN COKE AND AMERICAN CHARCOAL BRIGHT TINS; AMERICAN OLD STYLE, AMERICAN NUMETHOD, AND MF TERNE PLATES; CONTINUOUS ROOFING; CORRUGATED SHEETS; FORMED METAL ROOFING AND SIDING PRODUCTS; CAMBRIDGE RIGID REVERSIBLE METAL LATH; ACID-RESISTING SHEETS, ETC.

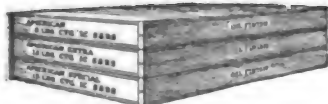
GENERAL—The sterling quality of "American" products is so thoroughly appreciated by the building trades that a detailed account of their various points of merit is scarcely necessary. These products, we believe, represent the highest standards obtainable through the use of highest grades of material, skilled labor and most modern equipment. Our large mill capacity insures prompt service. Full information and quotations will be furnished by any District Sales Office. The following products are of particular interest to architects and builders:



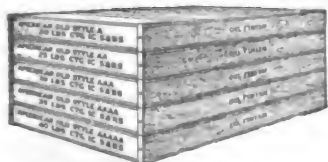
32 POUNDS COATING



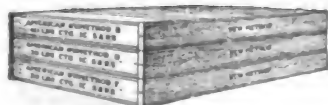
MF TERNES



AMERICAN TERNES



AMERICAN OLD STYLE TERNES



AMERICAN NUMETHOD TERNES

TERNE PLATES—MF Roofing Tin, aptly called "The Terne which turns the elements," is the original Old Style and is noted for giving good and lasting service wherever applied. The coating is 32 pounds, stamped on every plate.

American Terns—three grades, 8, 12 and 15 pounds coating.

American Old Style Terns, 1A to 5A, 20 to 40 pounds coating, carefully manufactured and strictly high grade; stamped and resquared.

American Numethod Terns, B, D, F; 40, 30 and 20 pounds coating, made by the Numethod process; stamped and resquared.

Continuous Roofing Tin, made from standard terns, in rolls, 10, 14, 20 and 28 inches wide.

GALVANIZED SHEETS—Apollo Best Bloom Galvanized Sheets are the highest grade and best known galvanized sheets manufactured, especially adapted to construction and sheet metal work. Apollo Sheets are made in gauges 10 to 30 inclusive.

We also manufacture Charcoal Hammered Bloom Galvanized Iron Sheets, gauges 14 to 28 inclusive.

CORRUGATED SHEETS—Corrugated Sheets are especially adapted to roofing and siding purposes, and are furnished either black, painted or galvanized, in FULL WEIGHT. The galvanized patterns bear in the stencil the word "Apollo"—on the black and painted patterns it is "American." Following are the standard corrugations: $\frac{5}{8}$, $1\frac{1}{4}$, 2, $2\frac{1}{2}$, 3 and 5 inches, in lengths of 5, 6, 7, 8, 9, 10 and 12 feet, with a covering width of 24 inches.

Curved Corrugated Sheets, for awnings, ceilings, arches, and also for culverts, cellars and underground uses; curved to any radius.

We also manufacture $2\frac{1}{2}$ -inch Patent Edge Corrugated Sheets, Genuine Reworked Iron Corrugated Sheets, and Special Corrugated Sheets for special purposes, formed to standard corrugations.

FORMED PRODUCTS—Our Formed Roofing and Siding Materials are furnished either black, painted or galvanized, stenciled as are the corrugated sheets noted above. These products are standard, durable, easily applied and popular with the building trades:

V-Crimped Roofing
Three-V-Crimped Roofing
Pressed Standing Seam Roofing
Roll and Cap Roofing
Self-Capping Roll Roofing
Plain and Rock-Face Brick Siding
Rock-Face Stone Siding
Weatherboard Siding

Beaded Ceiling or Siding
Corrugated Ridge Roll
Corrugated V-Ridge Capping
Plain Ridge Roll
Plain V-Ridge Capping
Corrugated Side-Wall Flashing
Corrugated End-Wall Flashing
Cambridge Metal Lath

ACID-RESISTING SHEETS—If there are any buyers who desire to purchase sheets that will withstand the accelerated acid test, we are prepared to furnish a product superior to any now on the market.



CORRUGATED SHEETS



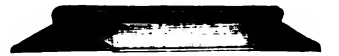
V-CRIMPED ROOFING



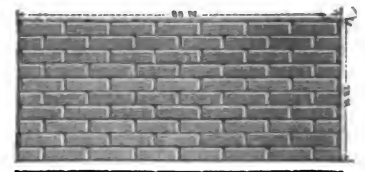
ROLL AND CAP ROOFING



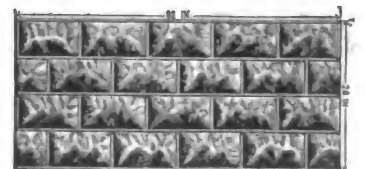
PLAIN V-RIDGE CAPPING



PLAIN RIDGE ROLL



PLAIN BRICK SIDING



ROCK FACE STONE SIDING



"A.B.C." SYSTEMS

Asbestos Protected Metal Company

Home Office and Works

BEAVER FALLS, PENNA.

Western Union Code

Cable Address, "Aspromet, New York"



TRADE MARK
 R. g. U. S. Pat. Office

PRODUCTS—Manufacturers of ASBESTOS-PROTECTED METAL (Patented) in all forms for Building Purposes, including CORRUGATED ROOFING SHEETS, BEADED SIDING SHEETS, CLAPBOARD SIDING, RIDGE CAPPING; also, GALVANIZED-IRON and COPPER FASTENERS and LEAD WASHERS

COLORS—Gray, Terra Cotta and White, or any combination of these colors.

DESCRIPTION—Asbestos-protected metal is a fireproof, moistureproof, acidproof and gasproof covering for roofs and exterior and interior wall and ceiling surfaces. It consists of a steel core covered with asbestos fiber and protected by a special asphaltum compound.

The gray surface shown in the adjoining illustration represents the steel core. The black surface represents the coating of special asphaltum compound applied to the steel core under great heat and pressure. The white surface shows pure asbestos felt firmly imbedded in the asphaltum compound.



DETAILS OF CONSTRUCTION OF ASBESTOS PROTECTED METAL

DETAILS—The coating of asphaltum compound equals in thickness at least five coats of heavy protective paint. The finished product is of the same construction on both sides of the sheet.

The steel core or body, being hermetically sealed within the asphaltum compound, is impervious to the attacks of moisture, acids and gases of all kinds, thus giving it absolute protection from the corroding attack of the various destructive agents to which an exposed building material is subjected. The asbestos covering will not rot or deteriorate, and presents an unbroken pure mineral surface which is absolutely fireproof. Does not require painting or treatment.

FLAT SHEETS—Gauges Nos. 16 to 26—30 in. wide, and any lengths up to 144 in.

CORRUGATED SHEETS—Gauges Nos. 16 to 26—28 in. wide and any lengths up to 144 in.

BEADED SHEETS—Gauges Nos. 20 to 26—29 in. wide and any lengths up to 120 in.

CLAPBOARD SHEETS—Gauges Nos. 20 to 26—26 in. wide and any length up to 120 in.

USES—Among the uses of Asbestos-protected Metal are the following:

ROOFING AND SIDING—For railroad and manufacturing buildings, coal tipples, tobacco warehouses, farm buildings, bungalows, automobile garages, car barns, chemical plants, and boiler houses.

INTERIOR FINISH—For ceilings, walls, panels, fireproof partitions and doors, fireproof and verminproof floor linings, elevator-shaft and penthouse linings, acid and warm-air flues.

STEAMBOATS—For fireproof and permanent ceiling and wall finish.

RAILROAD AND TRACTION SERVICE—For roofing, head-lining and paneling for steam and electric passenger cars, inside box-car roofs, controller box linings and general insulation.

"A.B.C." SYSTEMS

TABLE OF WEIGHTS

Approximate Weights of Asbestos-protected Metal Sheets in Lbs. per 100 Square feet

Gauge of Steel Core	Flat	Corrugated	Beaded	Clapboard Siding
No. 28	94	102	98	110
" 26	121	131	125	139
" 24	148	160	153	170
" 22	180	195	186	207
" 20	206	222	212	237

Ridge Clapping, Flashings, Window and Door Casing, all made to specifications.

Fasteners, Lead Washers, Special Nails, Sherardized Bolts.

The Carnahan Tin Plate and Sheet Co.

Manufacturers of

**Genuine Charcoal Iron Old Style Roofing Plates and
Other Brands of High-Grade Tin Plate**

GENERAL OFFICES AND WORKS

CANTON, OHIO

PRODUCTS—GENUINE CHARCOAL IRON OLD
STYLE ROOFING PLATES

TECHNICAL DESCRIPTION—"CARNAHAN GENUINE CHARCOAL IRON OLD STYLE," forty pounds coating to a box of 112 Sheets 20 x 28, is made in old-fashioned Knobbling Fires following in precise detail the methods used by the Old Welsh Makers, using Charcoal only as fuel.

The Blooms produced in these Charcoal Knobbling Fires are hammered and re-hammered under our large steam hammer, making the sheets made from these blooms soft and of perfect working quality.

The Sheets are Tinned and Re-Tinned by hand only in Pure Genuine Lagos Palm Oil, no acid whatever being used in this tinning process. The mixture used for tinning is 25% Pure Tin and 75% Pure Lead.

Every sheet is re-squared before Tinning, and stamped with brand and thickness, as per fac-simile of die as shown in this page, thus protecting the buyer.

SIZE—Made in 14 x 20 and 20 x 28 and in both IC and IX Gauges.

WHERE TO BE OBTAINED—Large stocks of "CARNAHAN CHARCOAL IRON OLD STYLE 40 LBS. GRADE" are carried by jobbers of Sheet Metals in all principal cities. Large stocks on hand at mill-at all times to insure prompt delivery.

SAMPLES—For independent chemical analysis we will send, on application, a sample of the Bar from which this excellent Plate is rolled, or, if preferred, a full size Tinned Sheet.

**CARNAHAN'S
IX
CHARCOAL IRON
OLD STYLE
40 LBS. GRADE**

INFORMATION—We have published for free distribution a booklet entitled "The True Story of Genuine Charcoal Iron Tin Plate," describing in plain language the full processes used by us in the manufacture of "CARNAHAN CHARCOAL IRON OLD STYLE 40 LBS. GRADE"—a really instructive description that every Architect and Builder should read.

DEPARTMENT OF COMMERCE AND LABOR
BUREAU OF STANDARDS
WASHINGTON

REPORT OF THE CHEMICAL ANALYSIS
OF BLACK PLATE
SUBMITTED BY CARNAHAN TIN PLATE
AND SHEET COMPANY
OF CANTON, OHIO

Test No. 8414	Laboratory No. 6431
Size of sheet.....	20" x 28"
Carbon	0.03 %
Manganese	0.03 %
Silicon	0.024 %
Sulphur	0.012 %
Phosphorus	0.041 %

February 7, 1911.

S. W. STRATTON, Director.

SPECIFICATIONS—A Standard Tin Roofing Specification for Architects' use is as follows:

TIN ROOFING WORK—All tin used shall be "Carnahan's Genuine Charcoal Iron Old Style 40 lbs. grade" made by the Carnahan Tin Plate and Sheet Co., Canton, Ohio. No substitute for this brand will be allowed.

Use IC thickness for the roof proper, decks, etc., and IX thickness for valleys, gutters and spouts, as required by design.

One coat of red lead, iron oxide, metallic brown or Venetian red paint, with pure linseed oil, shall be applied to the under side of the tin before laying.

"A.B.C." SYSTEMS

Follansbee Brothers Co.

Manufacturers of Hammered Open-Hearth Tin Plate

(Only Makers in America)

Metal Thresholds, Ventilators, Wall Ties

LIBERTY AND SHORT, SECOND AND THIRD AVENUES

PITTSBURGH, PA.

BRANCHES AND DISTRIBUTERS THROUGHOUT THE UNITED STATES



PRODUCTS—SCOTT'S EXTRA COATED AND FOLLANSBEE BANFIELD PROCESS ROOFING TIN; KEYSTONE VENTILATORS; SOLID DRAWN-BRASS THRESHOLDS; SECURITY WALL TIES



SCOTT'S EXTRA COATED—A hammered, open-hearth Tin Plate for roofs, gutters, valleys, etc. It is known that the purest iron produced for general use is that made by the open-hearth process. This is the quality of metal we use for the base plates or body of Scott's Extra Coated Roofing Tin. Hammering the ingots gives the metal the necessary working and wearing qualities and is a recognized improvement in the process. It is an additional operation not practised by other makers, the usual custom being to merely *roll* the ingots.

The repeated 800-ton blows of our great hammer firmly weld together every particle of the metal and give it the greatest density. It drives out the air or blow-holes, removes scale from the surface and makes the metal stronger yet *more pliable*.

The heavy coating is of the highest quality and is thoroughly amalgamated with the base plate, assuring *entire* roof protection in Scott's Extra Coated.

FOLLANSBEE "BANFIELD PROCESS"—GUARANTEE—We guarantee our Follansbee "Banfield Process" Roofing Tin, when painted with pure linseed oil and venetian-red iron oxide, and well soldered with rosin, will wear on roofs, gutters and valleys for **not less than fifteen years**. This guarantee is given over our official signature.

THE TRADE TERMS—The trade terms IC and IX designate the thickness of the base plates, the IX being the heavier and preferred by many for gutters and valleys.

THE KEYSTONE VENTILATOR—A thoroughly practical and substantially constructed ventilator. It will deflect the downward current without interfering with the flow upward and out of the impure air or smoke from within. Made in all sizes, either in copper, brass or galvanized material.

SPECIFICATIONS—Tin Plate for roof, gutters and valleys.

All tin used for roofing all parts of this building shall be Scott's Extra Coated IC, except valleys and gutters, which shall be IX. Each sheet must be embossed with brand name and gauge. No substitute for the above brand will be allowed.

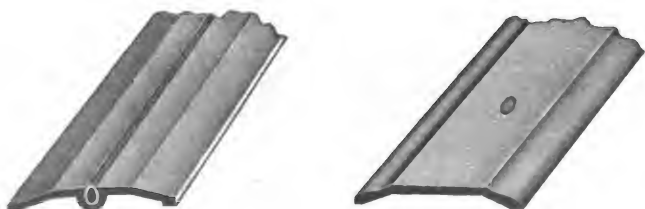
All tin shall be laid on selected waterproof paper. (Tar paper and other qualities containing acids prohibited.) No nails shall be driven through the sheets. All solder used shall be strictly half-and-half. Rosin only shall be used as a flux for soldering, and all rosin must be removed from seams before painting. All tin shall be painted one coat on under side and two coats on upper side with Venetian-Red Oxide of Iron paint, ground and mixed in pure boiled linseed oil.

Lower coat to be applied in the shop and to be thoroughly dry before sheets are laid. First upper coat to be applied immediately after roof is completed, second coat three days later. All painting shall be done with a hand brush and well rubbed in, and shall be part of the roofing contract.

The roofers shall wear rubber shoes, and no unnecessary walking over the roof or using the same for storage of other material will be allowed. All workmanship to be guaranteed for one year.

When pitch of roof is *three inches or less* to the foot, roofing is to be laid soldered Flat-Lock style, using 14 x 20-inch sheets, each sheet carefully notched and edged, edges $\frac{1}{4}$ inch. Sheets are to be laid on roof, one sheet at a time, the narrow way. Each sheet is to be secured to sheathing with three cleats, two on the long side, one on the short side; cleats to be one and one-half inches wide and carefully hooked over $\frac{1}{4}$ -inch edge and nailed to sheathing with two 1-inch barbed roofing nails to each cleat. The seams are to be thoroughly and smoothly hammered down with wooden mallet and carefully soldered with large coppers, using not less than six pounds of solder to each square of roofing.

When pitch of roof is *over three inches* to the foot, roofing is to be laid Standing Seam style, using 20 x 28-inch sheets, courses applied the narrow way, the 20-inch ends to be locked with $\frac{1}{4}$ -inch seams and carefully soldered. The 20-inch courses are to be locked with double Standing Seam and secured to sheathing with cleats every eight inches, using 1-inch barbed roofing nails to each cleat. The edges for Standing Seam shall be turned up $1\frac{1}{4}$ inch and $1\frac{1}{4}$ inch, the Standing Seam to be one inch high when completed. All valleys and gutters shall be applied Flat-Lock, sheets laid the narrow way, and of sufficient pitch to prevent any water standing therein.



SOLID DRAWN BRASS THRESHOLDS

Brushed or Polished, Plain and Air-tight Designs.

No. 1—4" wide, $\frac{3}{8}$ " high, $\frac{1}{2}$ " tubing
" 2—3" " $\frac{3}{4}$ " " $\frac{3}{4}$ " "
No. 3—4 $\frac{1}{4}$ " wide, $\frac{1}{2}$ " high
" 4—5" " $\frac{9}{16}$ " "
" 5—6" " $\frac{1}{2}$ " "



KEYSTONE VENTILATOR

FLASHING—Tin to be turned up 6 inches at chimneys and fire walls, and to be cap-flashed 4 inches, cap flashing to extend into brick work one inch and to be firmly wedged in with wedges not over 15 inches apart. Fill brick joints with strong Portland cement mortar.

VENTILATORS—For Keystone Ventilators to be used, state size and material of which they are to be made.

METAL THRESHOLDS—Specify finish, whether brush brass or polished brass, plain or air-tight design.. See illustration given herewith.

"A.E.C." SYSTEMS

The Clason Architectural Metal Works

Roofing and Sheet Metal Contractors

PROVIDENCE, R. I., U. S. A.

SPECIALTY PRODUCT—WIRE SNOW GUARDS FOR SLATE, SHINGLE AND TILE ROOFS

For roofs of one-quarter pitch use 50 guards per square; for roofs of one-third pitch use 75 guards per square; for roofs of one-half pitch use 150 guards per square.

OTHER PRODUCTS—ARCHITECTURAL SHEET METAL WORK, GUTTERS, CONDUCTORS, CORNICES, METAL WINDOWS, SKYLIGHTS, VENTILATORS, ROOFINGS

FOR SLATE AND TILE ROOFS—The following specifications are usually sufficient, but for some conditions, such as

DESCRIPTION—We manufacture three Designs of Snow Guards, the "Clason," "H-B," and "H-B Two-Piece" guard.

The "Clason" Snow Guard is the best. It requires more metal than other guards yet it is not obtrusive, and gives a pleasing effect when well applied. The brace extending below the loop gives additional strength and keeps the loop in an upright position.

This type is made for New Roofs only.

The "H-B" Snow Guards, for New Roofs, is a well-made guard a little lighter in metal and without the brace under loop, but it is strong enough for all ordinary conditions.

The "H-B" Guard, for Roofs Already Laid, is made in two parts and is a strong, practical guard for this use.

The two cuts show how the two parts go together after the Hook or Shank has been hooked over the top of slate.

MATERIALS—Our Snow Guards are made from either Copper or Galvanized-Steel Wire, carefully prepared and especially selected for our particular use. The material is ductile yet stiff and strong, and when formed will retain its shape.

The Copper Wire is Pure Copper, not copper-plated or copper-covered steel.

Our copper guards will last as long as the roof.

PRICES—Our prices are reasonable, and will be quoted on application.

FOR SHINGLE ROOFS—The following table gives the approximate number of guards required which may safely be specified for shingle roofs:

"A.B.C." SYSTEMS

towers and very steep roofs, or where large slate are used, it may be advisable to specify the guards to be applied in every joint in every course.

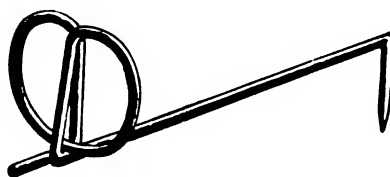
SPECIFICATION—Apply to all slate or tile roofs "CLASON" (or "H-B") SNOW GUARDS, manufactured by the CLASON ARCHITECTURAL METAL WORKS, PROVIDENCE, R. I.

Guards to be of PURE COPPER (or Galvanized Steel) Wire. Guards are to be laid in every other joint and every other course of slate (or tile) and staggered. The manufacturers will furnish instructions for applying.

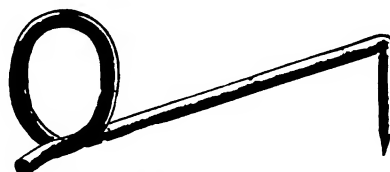
NOTE—Matter within parentheses denotes the alternate type or material that may be used.

INSTALLATION—In applying the "Clason" and "H-B" guards to new roofs, the eaves course should be laid with close joints, as usual, but the next course should be laid with the joints slightly open to receive the shank of the guard. After lining for the third course, place the guards in the joints, with the loop just below the lap of the course, and drive the prong into the roof boards; then lay the course, which will leave only the loop exposed. Care should be taken to have the shank well sunk into the joints, so that slate of following course will lie perfectly flat and not bear upon the guard.

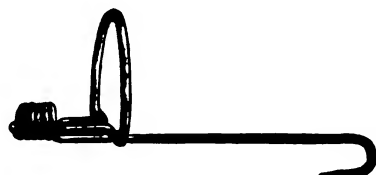
In applying the two-piece "H-B" guards to roofs already laid, first slip the shank piece up and under the slate, with the hook part lying flat, until the spiral strikes the butt of the slate, then turn the shank and draw down so that it will hook over the top of the slate below. Then take the loop piece of the guard and slip the prongs into the spiral part of the shank until the loop engages the spiral, as shown in illustrations.



"CLASON" GUARD FOR NEW ROOFS



"H-B" GUARD FOR NEW ROOFS



"H-B" TWO-PIECE GUARD FOR ROOFS
ALREADY LAID—FIRST POSITION



"H-B" TWO-PIECE GUARD FOR ROOFS
ALREADY LAID—SECOND POSITION

Milwaukee Corrugating Company

Manufacturers of Sheet-Metal Roofing and Siding, Eaves Trough,
Conductor Pipe, Metal Shingles and Steel Ceilings
Cornices, Skylights and Ventilators

"TITELOCK"

MILWAUKEE, WIS.

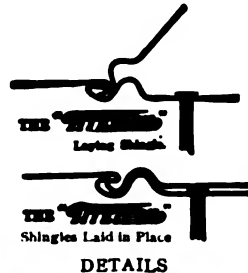
"Invisible Joint"

Branch
KANSAS CITY, MO.

PRODUCTS—"TITELOCK" METAL SHINGLES; "INVISIBLE JOINT" STEEL CEILINGS; "NU-AIR" VENTILATORS; CORNICES, SKYLIGHTS; "CRIMPEDGE" EAVES TROUGH, CONDUCTOR PIPE, ELBOWS AND TRIMMINGS; STEEL ROOFING AND SIDING

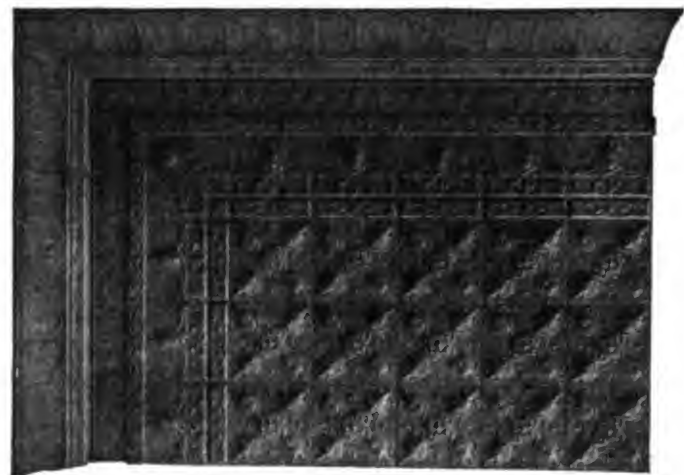
DESCRIPTION—We manufacture a complete line of sheet metal and roofing materials, but wish to call special attention to our "Titelock" Joint Metal Shingles, "Invisible Joint" Steel Ceilings and our highly improved "Nu-air" Ventilator.

"TITELOCK" METAL SHINGLES—Simple and accurate in construction, with an absolutely watertight lock. They are galvanized or painted after formation. Bottom and top of each shingle are precisely adjusted so that when laid no rain,



"Invisible Joint" STEEL CEILINGS—Are reproductions of old-world styles. Superior and beautiful copy-righted designs by modern artists who work exclusively for us. Made from best grade of material, they are fireproof and will not warp or crack. After being stamped and finished they are dipped in a mixture of white lead and linseed oil, rendering them rustproof and providing foundation for finishing coats after erection.

With every ceiling and wall finish we send itemized list of material furnished, complete instructions and a working drawing showing arrangement of plates and placing of furring strips, enabling the prompt and proper placing of the different plates.



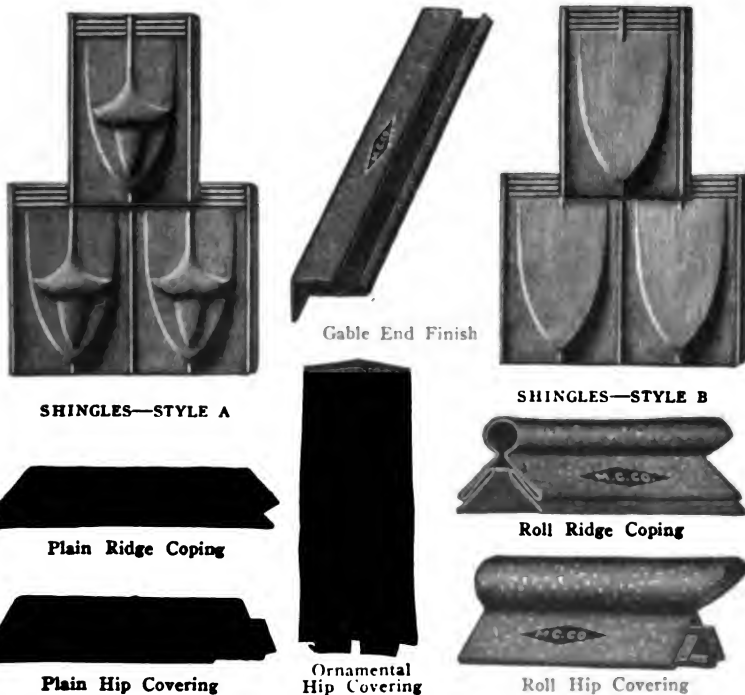
"Invisible Joint" STEEL CEILING

"NU-AIR" VENTILATOR—Constructed on scientific principles. It is made of galvanized iron formed so that neither wind, rain or snow can affect its shape or efficiency. **Strong, simple, attractive.** Illustration shows weatherband which prevents downward drafts through the airshaft. Cold air currents compel between weatherband and deflector, and forcing out the impure air to rise through the airshaft.



"NU-AIR" VENTILATOR

CATALOGS—For additional information relating to Cornices, Skylights, Ventilators and Ornaments, also Ceiling Designs, and including prices, sizes, and full information, write for catalog. Will be sent free.



"TITELOCK" METAL SHINGLE TRIMMINGS

snow, soot or dust can enter. The narrow corrugations, lengthwise on plates, insure rigidity and provide for expansion and contraction. "Titelock" Metal Shingles are made in two sizes, 7-in. by 10-in. and 10-in. by 14-in. Samples sent upon request.

"A.B.C." SYSTEMS

The Eller Manufacturing Company

Metal Ceilings, Roofing Tile, Cornices, Skylights, Ventilators and Siding

**ELLER'S
 "PERFECT-FIT"
 CEILINGS**

Office and Works:
 1106-1112 EAST 5TH STREET
 CANTON, OHIO



PRODUCTS—"Perfect Fit" Steel Ceilings; "Dux-Bac" Metal Roofing Tile; Cornices; Skylights; Ventilators

Also Roofing: CORRUGATED, V-CRIMP, PRESSED STANDING SEAM; ROLL TIN for Roofing and Valleys; IMITATION PRESSED BRICK SIDINGS; FINIALS, SPECIAL SPUN AND STAMPED ORNAMENTS

SPECIAL SHEET METAL WORK to Architects' Designs and Specifications

"PERFECT FIT" METAL CEILINGS—Every piece of metal that enters into our ceiling designs is stamped on steel dies, ensuring perfect fit and alignment of all parts.

Our designs are modeled by the best American, Spanish, French and Italian artists and stamped from re-hammered open-hearth steel sheets.

We manufacture also, in connection with our ceiling designs, many Side-Wall Metal Designs and Plates for Panels, Centers, Wainscotings, Moldings, Base Boards, Fillers, Borders, Corners, Coves, Miters, Tees, Ells, Crosses, Beam Coverings; Side Walls and Ceilings for Sanitary Bathrooms.

"DUX-BAC" METAL ROOFING TILE—Locked together by their perfect lock joint, they are waterproof. Water is conveyed from the center of the tile to small valleys on either side, which afford thorough drainage. "Dux-Bac" is made in three decorative patterns, similar to accompanying illustration, and of materials, sizes and prices given below.

FACILITIES.—Our plant is one of the most complete in above lines in the United States. We operate in connection with it a modern rolling mill and galvanizing department. All sheets used by us are made at our plant. Having our own bar mill and heating furnaces, we can ship without delay any of our products that may be specified by Architects.

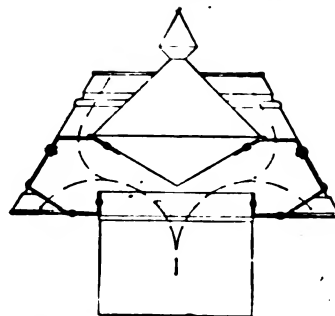


DESIGN NO. 2488
 ITALIAN RENAISSANCE STYLE METAL CEILING

KONICAL STEEL VENTILATORS

PRICE LIST			
Diam. Inches.	Price Galv.	Diam. Inches.	Price Galv.
2	\$1.00	10	\$5.75
2½	1.00	12	6.75
3	1.50	14	13.00
3½	1.50	16	20.00
4	1.75	18	27.00
4½	2.00	20	33.00
5	2.50	24	40.00
5½	2.85	30	65.00
6	3.40	36	120.00
7	4.00	40	180.00
8	4.65	48	240.00
9	5.20	60	360.00

Bases made to fit any roof or chimney, either square or oblong; prices extra, according to size and quantity.



SECTION OF KONICAL VENTILATOR



DUX-BAC METAL ROOFING TILE, STYLE B,
 Style C Size Ins.

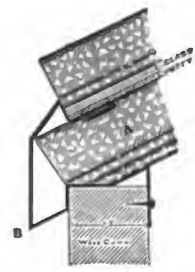


Fig. 1—Metal curb over wood curb 2".

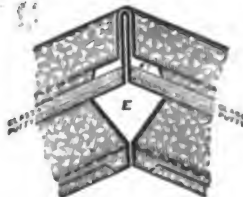


Fig. 3—Section of ridge bar and cap.

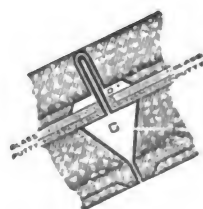


Fig. 2—Cross section of main bar and cap.

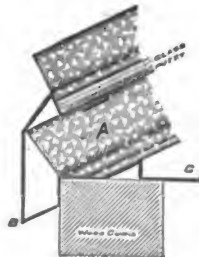


Fig. 4—Construction of metal curb over wood curb wider than 2", flange G turned down inside of wood curb and nailed.



Fig. 5—Stationary louvre turret skylight No. 599.

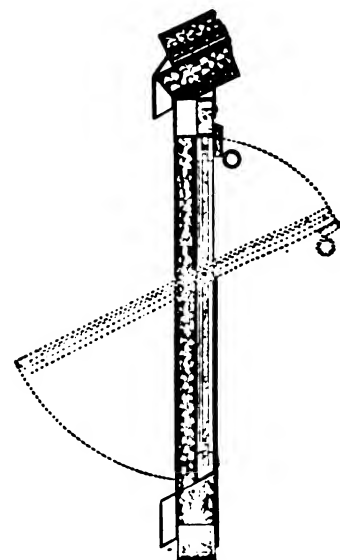


Fig. 6—No. 598 turret skylight with movable and self-locking mesh.

Prices Per Square

Style C	Size Ins.	
Galv. Toncan Metal.....	14 x 20	\$7.50
Galv. Charcoal Iron.....	14 x 20	7.00
Galv. Steel.....	14 x 20	5.65
IC Tin Painted.....	14 x 20	4.55
IX Tin Painted.....	14 x 20	5.60
Style A		
Galv. Toncan Metal.....	10 x 14	7.50
Galv. Charcoal Iron.....	10 x 14	7.00
Galv. Steel.....	10 x 14	5.65
IC Tin Painted.....	10 x 14	4.55
IX Tin Painted.....	10 x 14	5.60
Style B		
Galv. Toncan Metal.....	10 x 14	7.75
Galv. Charcoal Iron.....	10 x 14	7.25
Galv. Steel.....	10 x 14	5.90
IC Tin Painted.....	10 x 14	4.75
IX Tin Painted.....	10 x 14	5.85

Discounts, Copper and Special Brands of Tin Shingles quoted on application.

"A.B.C." SYSTEMS

DETAILS OF "ELLER" SKYLIGHT CONSTRUCTION

Globe Ventilator Co.

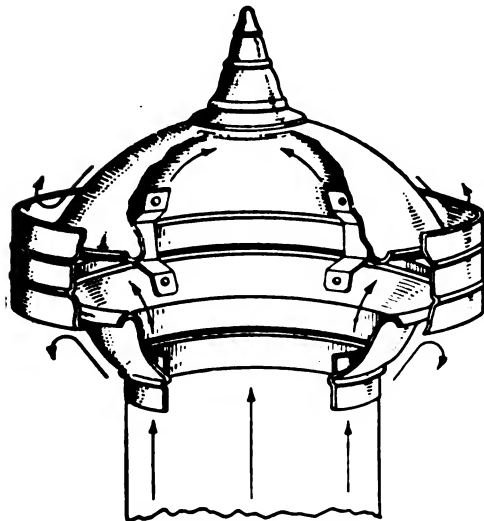
Manufacturers of

"Globe" Ventilators and "Globe" Ventilated Ridging TROY, N. Y.

TECHNICAL DESCRIPTION—The "GLOBE" VENTILATOR is constructed of heavy galvanized iron or copper. Its design, though scientific, is simple, with a minimum of parts; hence, it possesses rigidity and endurance. The sectional view shows how the air, in striking the upper or lower dome, is deflected by the turned edges, causing a vacuum in the head by suction. This exhaust action draws a continuous stream of air up the pipe.

The "Globe" ventilator is absolutely stormproof and there is no possibility of downward drafts with it.

"GLOBE" VENTILATED RIDGING is designed for use on peaked roofs where the introduction of a ventilator might break the sky line undesirably. It is adapted to both old and new roofs without regard to pitch. Absolutely stormproof.



"GLOBE" VENTILATOR
Sectional View



GLASS TOP "GLOBE" VENTILATOR

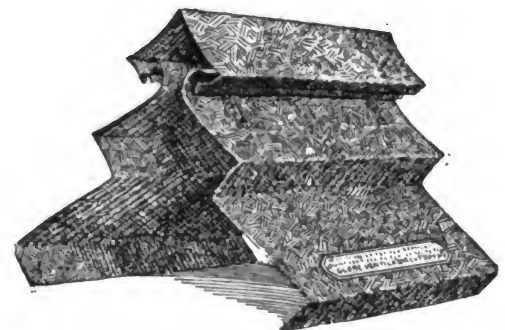


SKYLIGHTS WITH "GLOBE" VENTILATORS

"GLOBE" GLASS-TOP VENTILATOR—Where it is necessary to provide ventilation through the roof in connection with furnishing daylight, the Glass-Top Ventilator solves the problem. Being stormproof, and no damper being required, there is no loss of light.



"GLOBE" CHIMNEY COWL



"GLOBE" VENTILATED RIDGING

"GLOBE" VENTILATORS

Diameter, Price, Gauge of Galvanized Iron, Area and Approximate Volume of Air exhausted in 7-mile wind.

Inches	Price	Gauge of Iron	Area Square Inches	Cubic Feet Exhaust Per Hour
2	\$1.00	26	4	460
4	1.75	26	13	1,500
5	2.50	24	19	2,180
6	3.40	24	29	3,215
7	4.00	24	40	4,590
8	4.65	22	51	5,740
10	5.75	22	79	8,950
12	6.75	22	113	12,970
14	13.00	20	164	18,800
16	20.00	20	201	23,060
18	27.00	20	255	29,250
20	33.00	20	314	35,990
24	40.00	20	453	51,935
30	65.00	18	707	81,050
36	120.00	18	1,018	116,575
40	180.00	18	1,257	144,090
48	240.00	18	1,810	207,350
60	360.00	18	2,828	321,750
72	480.00	18	4,072	466,625
84	600.00	18	5,540	634,890

"GLOBE" CHIMNEY COWL—This Cowl is a perfect agent for the prevention of down-drafts in chimneys, with their attendant evils; also, it increases the draft in sluggish flues. Two or three flues may be covered with one base having separate pipes and caps for each flue, thus giving a maximum both of efficiency and economy. Illustrations and detailed description will be sent on request.

"A.B.C." SYSTEMS

The Burt Manufacturing Co.

High-Grade Ventilators and Skylights

800 MAIN STREET
AKRON, OHIO

GEO. W. REED & CO., Montreal, Canada, Sole Manufacturers of "Burt" Ventilators for Canada.

PRODUCTS—Manufacturers of the "BURT" GLASS-TOP VENTILATOR, a Combination Skylight and Ventilator, and the "BURT" METAL-TOP VENTILATOR, a Roof Ventilator only

SKYLIGHTS of Standard Form; OIL FILTERS AND EXHAUST HEADS

THE "BURT" METAL-TOP VENTILATOR—The "Burt" is also made with a metal top, instead of a glass top, when required (Fig. 2). With the exception of the top, both styles are *precisely alike* in construction and operation, but the metal-top style is a ventilator solely, and does not admit light. We furnish the sliding-sleeve damper in all metal-top ventilators, the same as in the glass-top style, without additional charge.



FIG. 1. SECTIONAL VIEW OF
"BURT" GLASS-TOP VENTILATOR
Showing Sliding-Sleeve Damper
(Patented)



FIG. 2. SECTIONAL VIEW OF
"BURT" METAL-TOP VENTILATOR
Showing Sliding-Sleeve Damper
(Patented)

THE "BURT" GLASS-TOP VENTILATOR—The "Burt" Glass-Top Ventilator (Fig. 1) has a most important characteristic in that it constitutes both a skylight and a ventilator. In many cases this makes the use of a regular skylight unnecessary.

At times, when it is desirable to close a ventilator, the "Burt" can be entirely closed without in the slightest degree obstructing the passage of daylight into the room below.

This feature is achieved by our patented damper mechanism which is, in fact, no damper at all, in the ordinary acceptance of the term, but a slide sleeve which moves up and down, opening or closing to any desired degree the ventilating aperture.

The "Burt" is the only ventilator on the market having this valuable feature, which is fully protected by our patents.

In every other make of ventilator in which a glass top is used the common flat damper is employed, and when that damper is closed the light is wholly shut off.

We furnish the glass top in all sizes up to and including the 72-inch size. We use heavy wired glass of ample weight for each size and with proper bracing to support same.

APPLICATION—Both styles of the "Burt" automatically remove impure air, hot air, smoke, steam, or gases, out of any building, without any expense whatever, other than the first cost of the ventilators.

EXCLUSIVE FEATURES—The "Burt" possesses the following features not found in any other ventilator:

- (1) The telescopic or sliding-sleeve damper;
- (2) It is a combination ventilator and skylight in which the light is never shut out;
- (3) The air shaft is unobstructed, and the air current never deflected downward;
- (4) The temperature and ventilation of a building can be easily and exactly regulated by the use of the sliding-sleeve damper, which operates positively and is dustproof;
- (5) A condensation gutter (patented) placed under the rim of the glass collects all moisture, making it impossible for water to drop down into the rooms below;
- (6) An especially-designed band (patented) fastens the glass so that it can be shipped separately, and easily placed in position. If glass is broken it can be replaced without taking down the ventilator. No water can remain on the glass, and the ventilator is guaranteed absolutely stormproof.

THE PATENTED DAMPER—The patented sliding-sleeve damper, as explained and used on all "Burt" Ventilators, is not affected by contrary air currents, requires no attention after it has been installed and, having no flat movable surface set in the body of the pipe, does not collect dust or refuse to be shaken off into the building, as is the case with all other styles of dampers.

The sliding-sleeve damper is operated from below by means of a cord and pulley, and can be readily adjusted by the special attachment, patented (see Figs. 1 and 2), by which the rope is forced between the spring and held permanently in place. The damper descends by gravity when the spring clutch is released, but it can be held firmly at any position wanted.

It is not necessary to fasten the cord to a nail, hook, or post, as is the case where the common flat damper is installed. Also, there is nothing in the "Burt" Ventilator to interfere with the operation of machinery, a frequent trouble where the flat-damper method is used from the way in which the cords require to be attached.

CONSTRUCTION—The "Burt" Ventilator is made round or square. Constructed of galvanized iron, brass, zinc, copper, or Toncan metal.

Great care is exercised in making the air shaft round; the sliding sleeve, being also perfectly round and fitting loosely against the pipe, slides easily up and down without friction. When the sleeve is at its highest point it is in contact with the top and completely closes the ventilator.

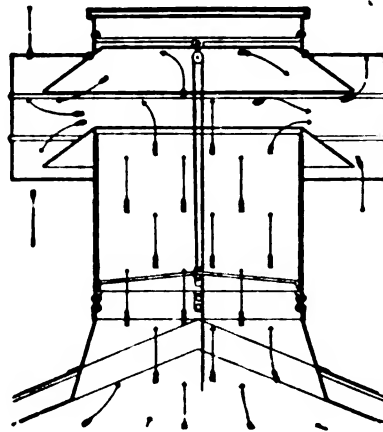


Fig. 3

GREAT ADVANTAGES—The "Burt" Ventilator being so constructed that the air shaft remains unobstructed, *whether the ventilator is open or closed*, it follows that the warm air current flows at all times freely to the top of the air shaft and thence escapes to the outside. (Fig. 3.)

Moreover, in the "Burt" the ventilation takes place uniformly all along the circumference of the pipe by reason of a uniform size and shape of opening, while in the flat damper the opening is *irregular in shape, size and position* within the shafts. Hence the "pulling power" of the "Burt" is both greater and also more positively controlled than that of any other stationary ventilator.

In other ventilators, when the flat damper commonly used is partly closed, the air current strikes the damper (Fig. 4) and is reflected back into the room.

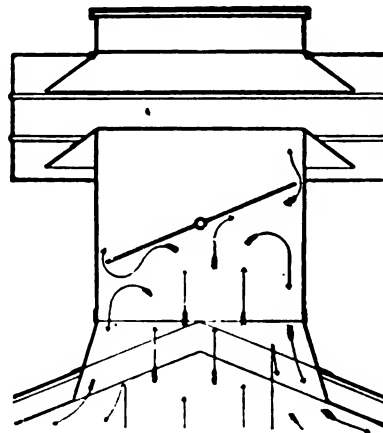


Fig. 4

"BURT" VENTILATOR, SHOWING AIR CURRENTS

SPECIFICATION FORM—"Furnish and set up 'Burt' (glass or metal top) Ventilators with adjustable sliding-sleeve damper and attachment for holding damper, of the size and number shown on plans, all to be made of gauge galvanized iron (or copper or brass) and manufactured by The Burt Manufacturing Company of Akron, Ohio."

REFERENCES—The following list of repeat orders is the best evidence of the merits and popularity of "Burt" Ventilators:

Order Received

United States Steel Corporation.....	93d
United States Government.....	44th
American Beet Sugar Co.....	17th
Standard Oil Company.....	26th
Chicago Ry. Co., Chicago, Ill.....	4th
Importers' Tobacco Co., Richmond, Va.	7th
Armstrong Cork Co., Beaver Falls, Pa.	4th
Canadian Locomotive Wks., Montreal.	5th
Canadian Pacific Ry., Montreal.....	8th
Oliver Chilled Plow Works, South Bend, Ind.	2d

And Many Others.

During the past five to six years large sales have been made to the following lines of trade and classes of buildings (addresses furnished on application):

Electric Light and Power Plants, Iron and Steel Works, Machine Shops, Textile Mills, Sugar Mills, Lumber Mills, Paper Mills, Churches, Schools, Colleges, Automobile and Brass Manufacturers, Breweries, Theaters, Banks, Hospitals, Garages, Car Barns, Rubber, Furniture and Tobacco Manufacturers, Mines, Laundries, Ice Factories, Glass Manufacturers, Cotton Oil Mills, and others.

PRICES, DIMENSIONS, WEIGHTS AND GAUGE OF IRON OF "BURT" VENTILATORS

Diameter of Neck, Inches	Price with Sliding-sleeve Damper	Gauge of Iron	Diameter of Outside Rim or Band, Inches	Height of Glass Top Without Base, Inches	Height of Metal Top Without Base, Inches	Length of Neck from Bottom to Lower Rim of Wind Shield, Inches	Net Weight, Metal Top Without Crating, Pounds	Net Weight, Glass Top Without Crating, Pounds	Area of Diameter in Square Inches
12	\$ 5.00	22	22	14	17	4 1/4	17	20	113.10
14	7.50	22	24	15	17 1/2	4 1/4	20	24	153.94
16	10.00	22	26	15 1/2	19	5	24	30	201.06
18	12.50	20	29	16	21	5 1/4	28	34	254.47
20	15.00	20	32	18	23	6	33	42	314.16
24	18.00	20	38	22	26	6 1/4	45	56	452.39
30	25.00	18	46	24	30	7	90	105	706.85
36	37.50	18	54	27	36	8 1/4	130	155	1017.88
40	50.00	18	64	33	40	10	175	200	1256.00
42	54.00	18	68	34	42	11	190	225	1386.00
48	60.00	18	78	36	46	12	300	320	1809.00
54	70.00	18	86	40	51	13 1/4	350	400	2390.00
60	80.00	18	94	43	54	15	430	480	2827.00
66	90.00	18	102	46	55	16 1/4	500	550	3456.00
72	100.00	18	110	51	66	18	560	610	4071.00

Prices are f. o. b. Akron, Ohio.
Ventilator bases are charged for extra, for which prices will be quoted on receipt of specifications.

"A.B.C." SYSTEMS

Thomas Lee

Manufacturer of Lee Roof Ventilators

128-132 WEST SECOND STREET
 CINCINNATI, OHIO

For our Catalog on Hollow Metallic Windows see Section 16D, Cat. 3

PRODUCTS—LEE GALVANIZED IRON AND COPPER ROOF VENTILATORS, WITH OR WITHOUT METAL DAMPERS; ROOF VENTILATORS WITH GLASS TOPS AND GLASS DAMPERS

INTRODUCTION—The Lee Ventilator (patented) is the result of long experience and scientific investigation of conditions which generally exist in buildings to be ventilated, combined with a careful test of efficiency of systems so far introduced.

LEE VENTILATOR WITH METAL TOP AND METAL DAMPER—An absolutely stormproof, durable, effective and well finished ventilator. Made with or without damper.

LEE VENTILATOR WITH GLASS TOP AND GLASS DAMPER—For use on buildings where light as well as ventilation is desired, often saving the expense of skylights. Strongly built and stormproof. Made with or without wire glass damper.

SIMPLICITY—The mechanism is such that these ventilators may be operated by any one; the damper being opened or closed by pulling a cord which releases the steel grip in the locking device. The construction, while being effective, is so simple that it cannot bind or get out of order. It is unnecessary to fasten the operating cord, as the automatic locking device holds the damper in any required position.

APPLICATION TO BUILDINGS—Lee Ventilators are adapted for installation in all types of buildings and are easily fitted to existing structures. They have proved their efficiency when used on Office Buildings, Banks, Apartment Buildings, Residences, Court Houses, Hospitals, Theatres, Churches, Schools, Hotels, etc., and have proved all qualities claimed where they have been used for removing foul air, gases, steam, smoke, etc., from Factories, Foundries, Machine Shops, Mills, Power Houses, Packing Plants, etc. For such buildings as Re-drying Tobacco Plants, these ventilators are especially desirable because they permit the ventilation to be regulated.

MATERIAL—Galvanized iron or copper, firmly braced, reinforced and well finished.

COST—The cost of installation for Lee Ventilators is very moderate and they require no maintenance.

The advantages of these ventilators are apparent when the cost of installation and maintenance of mechanical systems of ventilation is considered.

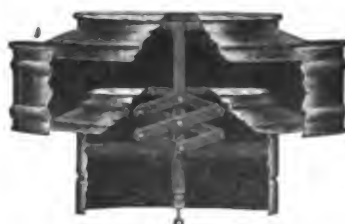
"A.B.C." SYSTEMS



LEE VENTILATOR WITH GLASS TOP



LEE VENTILATOR WITH METAL TOP



DAMPER CLOSED
 LEE VENTILATOR WITH GLASS TOP
 AND GLASS DAMPER



DAMPER OPEN AND LOCKED
 LEE VENTILATOR WITH METAL TOP
 AND METAL DAMPER

PRICE LIST
 LEE VENTILATORS

Size, Inches	Price	Gauge of Galv. Steel	Shipping Weight, Lbs.
4	\$2.50	24	5
5	3.00	24	6
6	3.50	24	8
8	4.00	24	10
10	4.50	24	12
12	5.00	22	22
14	6.00	22	24
16	8.00	22	28
18	10.00	22	35
20	12.00	22	48
24	16.00	22	63
30	24.00	20	110
36	36.00	20	175
40	48.00	20	200
42	54.00	20	230
44	58.00	20	260
48	64.00	20	340
50	70.00	20	360
54	80.00	20	380
60	90.00	18	475
66	110.00	18	560
72	120.00	18	600
78	130.00	16	740
84	150.00	16	800
90	170.00	16	830
96	190.00	16	1090

TABLE OF DIMENSIONS
 LEE VENTILATORS

Diameter Ventilator, Inches	Greatest Diameter Outside Band, Inches	Area, Sq. Inches
4	6½	12.5
5	8	15.7
6	10	18.8
8	12	25.1
10	16	78.5
12	18½	113.1
14	24	153.9
16	26	201.1
18	29	254.5
20	31	314.2
24	36	452.4
30	44	706.9
36	56	1017.8
40	64	1256.6
42	66	1385.4
44	69	1520.5
48	76	1809.5
54	85	2290.2
60	93	2827.4
66	102	3421.2
72	111	4071.5
78	120	4778.3
84	130	5541.7
90	139	6361.7
96	148	7238.2

Discount quoted upon application. Made with or without dampers. Less than 12-inch sizes are not made with dampers. Bases are extra. Prices of Lee Ventilators made of Copper promptly furnished.

Dahlstrom Metallic Door Company

Manufacturers of

**"Dahlstrom" Patent Hollow Metal Doors, Trim, Partitions, etc.
And of Cold-Drawn Steel Moldings**

NEW YORK, 229 Broadway
PHILADELPHIA, Real Estate Trust Bldg.
SAN FRANCISCO, 916-920 Rialto Bldg.
SEATTLE, Colman Bldg.
CINCINNATI, Mercantile Library Bldg.
CLEVELAND, 905 Garfield Bldg.
WINNIPEG, 205 Maryland Street
BOSTON, 14 L Street, South Boston
ATLANTA, 1406 Candler Bldg.

JAMESTOWN, N. Y.

CHICAGO, 439 Monadnock Bldg.
ST. LOUIS, 921 Locust Street
DENVER, 1721 Stout Street
LOS ANGELES, Storey Bldg.
WASHINGTON, McLachlen Bldg.
DETROIT, 1314 Ford Bldg.
PITTSBURGH, 2435 H. W. Oliver Bldg.
DALLAS, 730 Wilson Bldg.
SALT LAKE CITY, Boston Bldg.



PRODUCTS—HOLLOW-ALL-METAL FIREPROOF DOORS AND SASH, WINDOW FRAMES AND SASH, in Steel, Brass or Bronze and for all purposes; HOLLOW METAL AND GLASS PARTITIONS, ELEVATOR ENCLOSURES, ELECTRICAL CABINETS, TELEPHONE BOOTHS, LOCKERS, WARDROBES, BATH ROOM CABINETS AND SPECIAL WORK

Complete Trim: CASINGS, JAMBS, WAINSCOT, PICTURE AND WIRE MOLDING, BASE, CHAIR RAIL, ETC.; PRESSED METAL SHAPES AND MOLDINGS

ELEVATOR CAR INTERIOR WORK; MAUSOLEUM WORK; DUMB-WAITER DOORS; DOORS FOR SPECIAL PURPOSES

UNDERWRITERS' WINDOWS, DOORS AND SHUTTERS

COLD-DRAWN STEEL MOLDINGS for General Use

DAHLSTROM METALLIC DOORS, ETC.—Hollow Metal Fireproof Door Construction was originated by us. We extended the idea to other features as soon as its success was demonstrated, and now our factory occupies a floor space of over Two Hundred Thousand square feet with capacity of from 1200 to 1500 men. Our machinery and equipment is specially designed for the needs of our business. In adding to our line the manufacture of **Cold-Drawn Steel Moldings** we have not only greatly improved the molded features of our own product but supplied an extensive industrial need. We have developed all of our different products to the highest degree of construction, workmanship and finish.

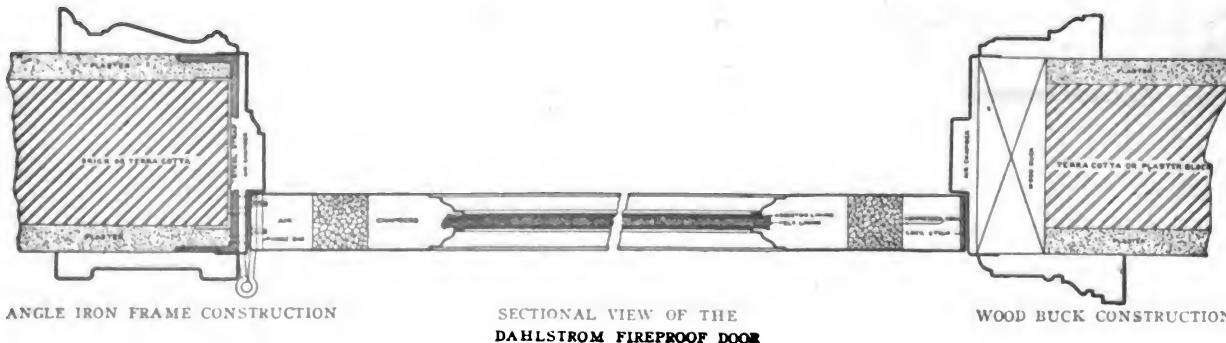
BRONZE WORK—Our products are made in Steel, Brass, Bronze or Copper according to specification.

For durability, color, and texture of surface for finishing, Bronze is the ideal metal. Especially is this true where greatest beauty, symmetry and lasting properties are required—such as for entrance and exterior doors.

Doors constructed of Bronze can be either plain with cold-drawn bronze moldings in simple designs, or with cast-bronze ornaments, rosettes, panels, etc., in the most elaborate designs, applied in accordance with Architect's details.



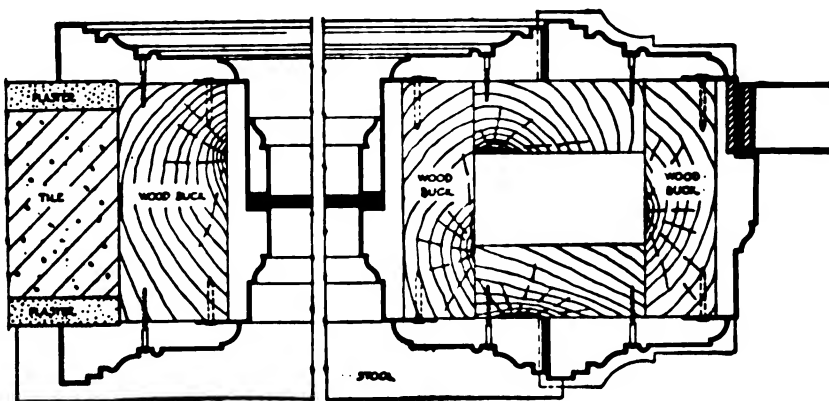
WALKER BUILDING, SALT LAKE CITY. DAHLSTROM DOORS FOR ARTISTIC ENTRANCE



PATENTS—We have fully covered with patents all those features of manufacture invented or employed by us to produce strength with minimum of weight, including a number of novel features not possessed by any other make.

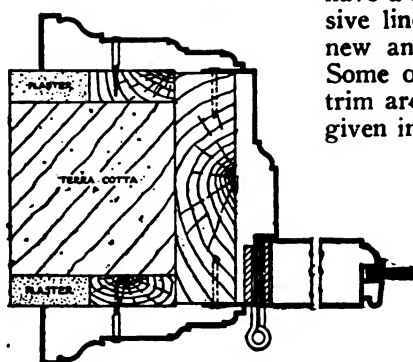
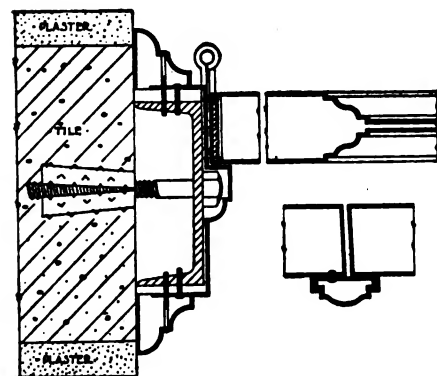
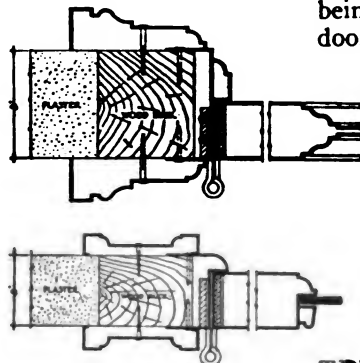
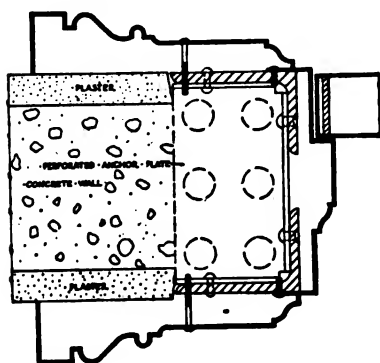
JOINTS—By special methods, combined with extreme care in the details of manufacture, the connections between the different members forming our doors, etc., are rendered entirely invisible with no danger of eventually opening up.

FIREPROOFING AND SOUNDPROOFING—The elimination of all combustible materials and the peculiar construction, which was thoroughly studied and tested before it was adopted, have given our work fireproof qualities never equaled in this department of building construction.



DOOR BUCK CONSTRUCTION. BORROWED LIGHTS ADJOINING DOORS

SECTIONS SHOWING FORMS OF DOOR CONSTRUCTION



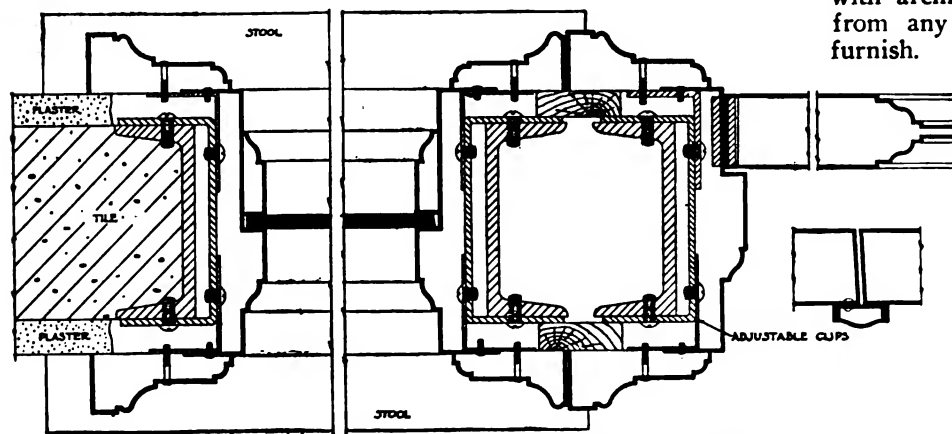
The introduction of felt and cork cushions prevents metallic ring and produces soundproofness, and the cushions, being non-conductors of heat, add to the fireproofness of our doors.

CONSTRUCTION—By reference to the accompanying illustrations an accurate idea will be gained of our method of construction. Architects will not need much further explanation. The jambs and heads are shipped "knocked down" to allow of necessary adjustment to the rough openings in the buildings. The joints in the mitered corners of casings are all welded continuously, by which the joints are made unbreakable and invisible.

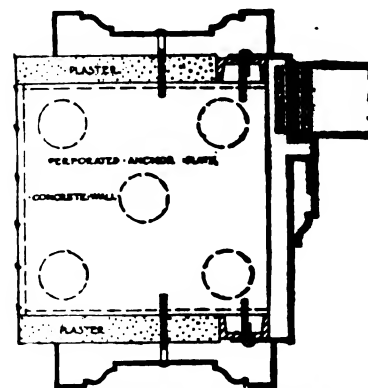
TRIM—To meet demands for specially-designed shapes we have a large force of expert tool and die makers. Our extensive line of stock designs is continually being augmented by new and special dies made to carry out architects' details. Some of the patterns and separate members for making up trim are shown in the pages on moldings. A full selection is given in our Complete Molding Book.

GUARANTEE—The Dahlstrom Metallic Door Company guarantees all materials and workmanship used in the manufacture and construction of their products to be of the very highest quality and that the work installed by them will be fully satisfactory.

TO ARCHITECTS—We consider it a pleasure to co-operate with architects and will submit drawings for their approval from any rough sketches or suggestions which they may furnish.



DOOR BUCK CONSTRUCTION. BORROWED LIGHTS ADJOINING DOORS



DOOR BUCK CONSTRUCTION

"A.B.C." SYSTEMS

Continued on next page

ELEVATOR DOORS AND ENCLOSURES—Having thoroughly developed our all-metal doors, trim, moldings, etc., for making buildings fireproof, we found the greatest remaining source of risk to be the open elevator shafts and stairways which, in case of fire, turned into veritable chimneys the swiftest, best and sometimes only means of escape.

To overcome this serious risk we have developed our products to include fireproof elevator enclosures, adaptable to every requirement for safeguarding elevator shafts or stairs.

Construction of these enclosures is of the same high quality of workmanship and materials as Dahlstrom Doors. Dahlstrom trim and moldings are used so that the finish may conform with the rest of the interior work.

We give herewith two illustrations of elevators and stairways enclosed with Dahlstrom products. One of these shows the use of wire glass, where light must be provided. But in order not to impair the effectiveness of the fireproofing, we strongly recommend the use of all-metal enclosures, as shown in the second illustration.

We make to order every style elevator doors, in any combination, and can supply any standard fitting, lock or action that may be specified.

APPROVAL OF UNDERWRITERS—The National Board of Fire Underwriters have tested and approved our doors and other work, and their labels of inspection are furnished when desired. The Building Departments of the largest Cities in the United States have also given our work their approval.



J. L. HUDSON BUILDING, DETROIT, MICH. ELEVATOR SHAFTS AND STAIRWAY ENCLOSED WITH DAHLSTROM PRODUCTS SHOWING USE OF WIRE GLASS

TEST—A practical demonstration, bearing out our claims of absolute fireproofness, was afforded in the fire which occurred on the 26th floor of the Singer Tower Building, September 29, 1910, in which our doors confined the fire for hours in the room where it started, thus saving this famous building from destruction.

ERECTION—As our work is completely finished and the hardware is applied before it leaves the factory, it is essential that all rough work be completed and the building cleaned out before our work is started. This will eliminate danger of injury to the finished work by other workmen handling heavy material and will facilitate the erecting of our work.

FINISH—To insure the finish of our work being such that architects can, without hesitation, specify its use in the finest buildings, all doors, etc., receive from six to eight coats of enamel, each coat being baked in ovens heated according to requirement up to 300 degrees. The result is a smooth, elegant and lasting finish, equal in quality to the best hardwood finish and more durable.

We reproduce natural wood or metallic finishes in any color.

(NOTE—To prevent corrosion all steel is carefully cleaned and pure linseed oil paint applied to insides of plates before forming them or putting them together.)

HARDWARE—We fit and apply all general hardware, and for the proper attaching of checks, etc., we provide steel reinforcements. This allows the use of any kind of hardware. Samples or templates of same must be at our factory by the time the actual work on the doors is commenced. Time and expense will be saved if all hardware is ordered interchangeable, and packed with machine screws.

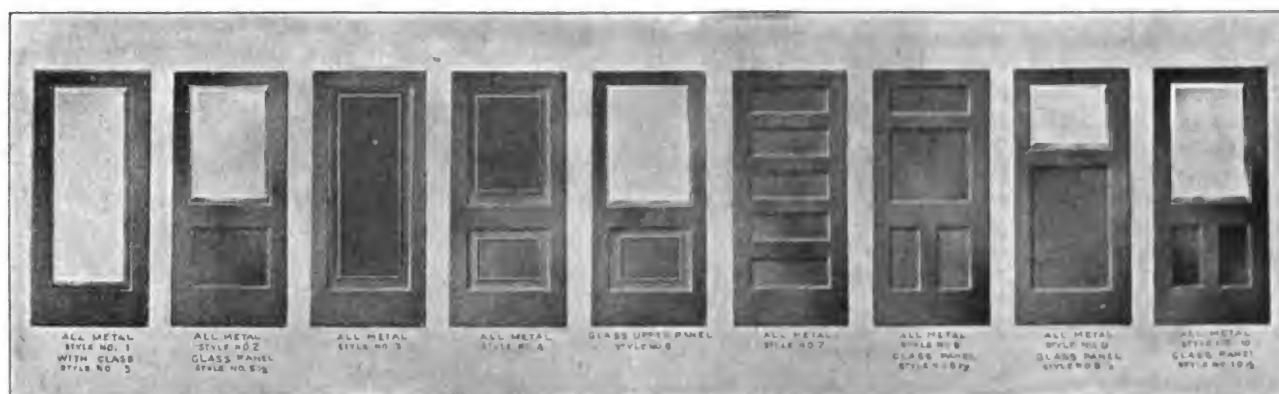
POINTS OF EXCELLENCE—The general advantages gained from the installation of our work are: 1. Completion of the fireproof construction of a building to the last detail; 2. Excellent finish and appearance; 3. All material is finished before



DAHLSTROM ELEVATOR DOORS AND ENCLOSURES WITHOUT GLASS

"A.B.C." SYSTEMS

Continued on next page



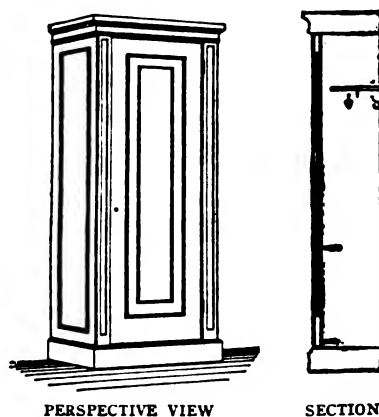
A FEW SPECIMEN TYPES AND STYLES OF DOORS

leaving the factory. This prevents the annoyances of painting work, after erection, in the dust and dirt of a building under construction; 4. Metallic ring is prevented by use of cork-and-felt cushions; 5. Considerable saving in insurance rates; 6. Less cost of maintenance than woodwork.

TERRITORY—Contracts are solicited for f. o. b. factory shipments as well as for work installed anywhere.

WARDROBES, LOCKERS, BOOTHS—Our metal wardrobes are neat, practical and artistic in design and are highly finished to match any color required, or wood-grained, if desired. They are sanitary, rodentproof and fireproof and specially well suited for hotel, office and garage.

Each wardrobe has shelf, coat hook, umbrella holder, drip receptacle and plain bolt lock. The diagrams show the attractive style that is carried in stock. We will make to order any style desired.



In addition to Wardrobes we make to order Telephone Booths of very superior workmanship and finish, and also commercial all-steel Lockers for all purposes and requirements, in units or in nests, of any style and in any finish.

In specifying Booths, Wardrobes or Lockers, give intended location, complete exterior and interior dimensions, stating sizes of drawers, closets, telephone compartments, etc., if such are required, and also finish and hardware desired.

PRICES—Estimates, samples and detailed information supplied on inquiry. Submission drawings to suit your requirements will be tendered with estimate, if desired.

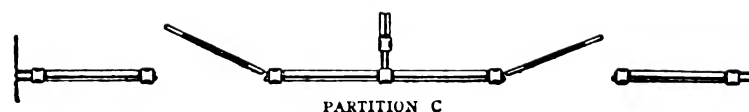
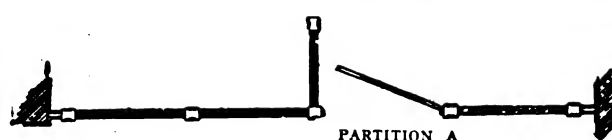
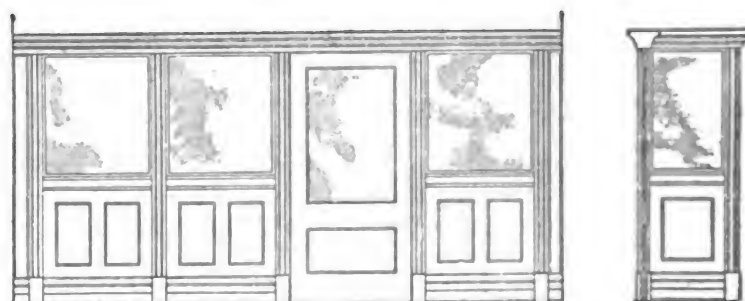
SPECIFICATION POINTS—All structural work should be provided and set in place by the general contractor, but, if so desired, we can include same in our estimates. Buckwork can be of any type, as indicated in the details shown herewith.

CLEARANCES REQUIRED—In setting out bucks, allow 1 inch in width and $\frac{5}{8}$ in. in height over net size of doors for clearance, care to be taken to have buck frames absolutely square and plumb.

"A.B.C." SYSTEMS

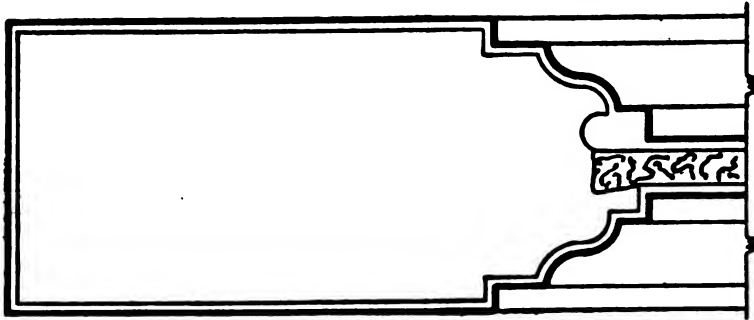
STYLES OF DOORS—The accompanying cut shows some few types of doors most generally used. In doors without glass panels our Colonial style forms the base, and additional panels are planted on as desired. The styles can be varied to suit the customer's taste.

PARTITIONS—We construct hollow-metal partitions for the subdivision of offices at minimum consumption of space. They are made with or without glass panels, are fireproof and easily adapted to suit varying requirements. They cost very little more than high-grade wood partitions, are interchangeable, easily erected and taken down by the housecarpenter without damage and therefore are found very economical.

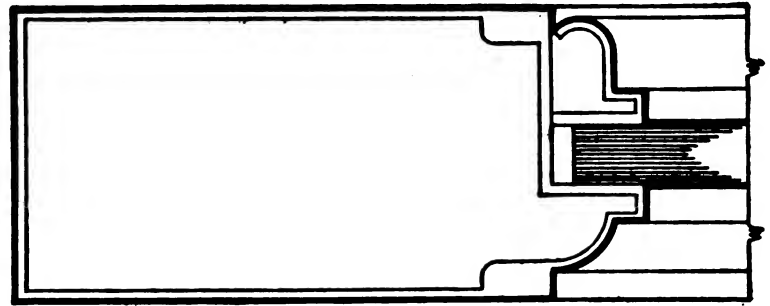


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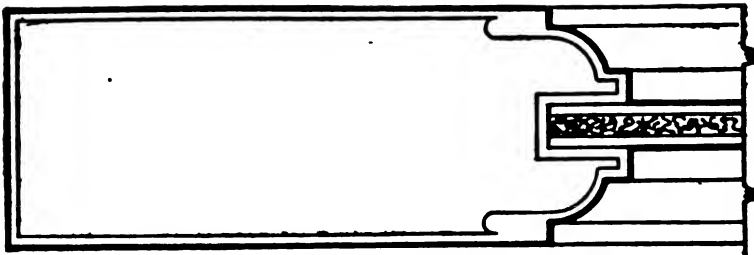
DOOR SECTIONS SHOWING PANEL MOLDINGS



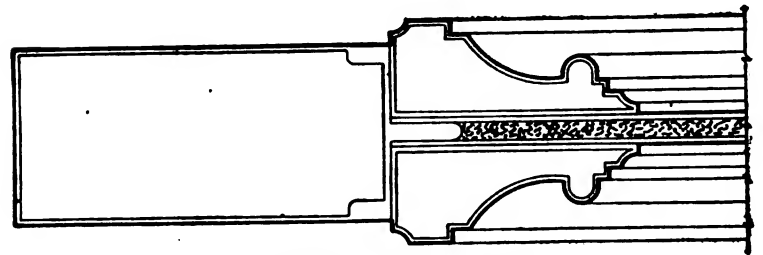
STYLE "A"—FULL SIZE



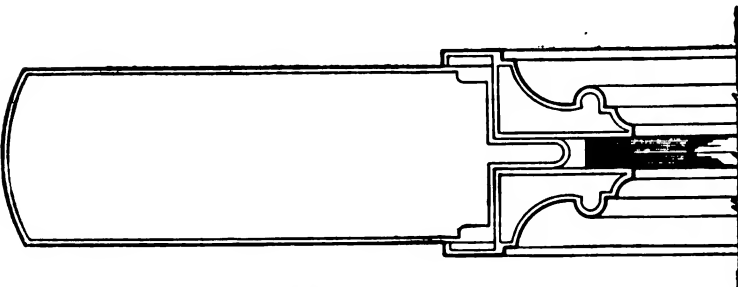
STYLE "D"—FULL SIZE



STYLE "E"—FULL SIZE



STYLE "Q"—HALF FULL SIZE



STYLE "N"—HALF FULL SIZE.

IMPORTANT ITEMS, WHEN ORDERING DAHLSTROM DOORS—1. State FINISHED thickness of walls or partitions and kind of buck work. 2. Give sketch showing swing of doors, in or out of room. 3. Sizes given should be for net opening in the jamb. State height of thresholds. 4. State style of doors desired; also, whether all-metal or with glass panels and specifying kind of glass. 5. State whether casings are desired for one or both sides of doors; also width, with or without plints. 6. State kind of locks, hinges, etc. If others furnish the hardware, ALL SAMPLES OF NECESSARY HARDWARE MUST BE SENT TO US AT ONCE. 7. We will submit samples of our standard finishes for selection, or if the finish is to be like adjoining work, samples of color and wood grain should be sent us to match. 8. State the time when the work will be required in the building.

REFERENCES

The work executed by us is our best recommendation and we quote below a few of our installations:

United States Express Building, Greenwich and Rector Streets, New York City.
Singer Building, 149 Broadway, New York City.
Post Office and Office Building, Grand Central Station, New York City.
Scribner Press Building, New York City.
Numismatic Society Museum, New York City.
Kinsella Apartments, New York City.
Hendrik Hudson Apartment House, 110th to 111th Streets and Cathedral Parkway, New York City.
Stuyvesant Apartment House, 98th Street and Riverside Drive, New York City.
Gramercy Park Apartment House, 24 Gramercy Park, New York City.
Apartment House, 93d Street, New York City.
Apartment House, 925 Park Avenue, New York City.
Columbia County Court House, Hudson, N. Y.
Good Housekeeping Building, Springfield, Mass.

Bell Telephone Exchange, Philadelphia, Pa.
First National Bank Building, Denver, Colo.
Soldiers' Memorial Building, Pittsburgh, Pa.
School of Medicine Building, Pittsburgh, Pa.
Hartley Orpheum Theatre, Duluth, Minn.
Virginia High School, Virginia, Minn.
Humboldt School, St. Louis, Mo.
Meramec School, St. Louis, Mo.
Canada Permanent Building, Winnipeg, Man.
Alloway-Champion Building, Winnipeg, Man.
Bankers Trust Building, New York City.
Union National Bank, Monticello, N. Y.
Bell Telephone Exchange, Wilmington, Del.
Hunter School, Philadelphia, Pa.
William Penn High School, Philadelphia, Pa.
Englewood Theatre, 6521 State Street, Chicago, Ill.
Seventh Regiment Armory, 34th Street and Wentworth Avenue, Chicago, Ill.
Underwriters' Laboratories, Chicago, Ill.
R. A. Long Building, Kansas City, Mo.
Luning Building, San Francisco, Calif.

St. Clair Building, San Francisco, Calif.
The Bank of Italy, San Francisco, Calif.
Hibernia Bank, San Francisco, Calif.
Oakland Bank of Savings, Oakland, Calif.
Royal Insurance Building, San Francisco, Calif.
Pacific Mutual Life Insurance Building, Los Angeles, Calif.
Wells Fargo Co. Express Building, Portland, Ore.
Reuben McMillan Library, Youngstown, Ohio.
Mahoning County Jail, Youngstown, Ohio.
Curtis Publishing Co.'s Building, Philadelphia, Pa.
Amicable Life Insurance Co.'s Building, Waco, Texas.
Hearst Building, San Francisco, Calif.
Commercial Club, Salt Lake City, Utah.
Utah Hotel, Salt Lake City, Utah.
Cort Theatre, Chicago, Ill.
Columbia Theatre, Chicago, Ill.
Du Pont Office Building, Wilmington, Del.

DAHLSTROM METAL MOLDINGS

We claim for our cold-drawn metal moldings briefly:

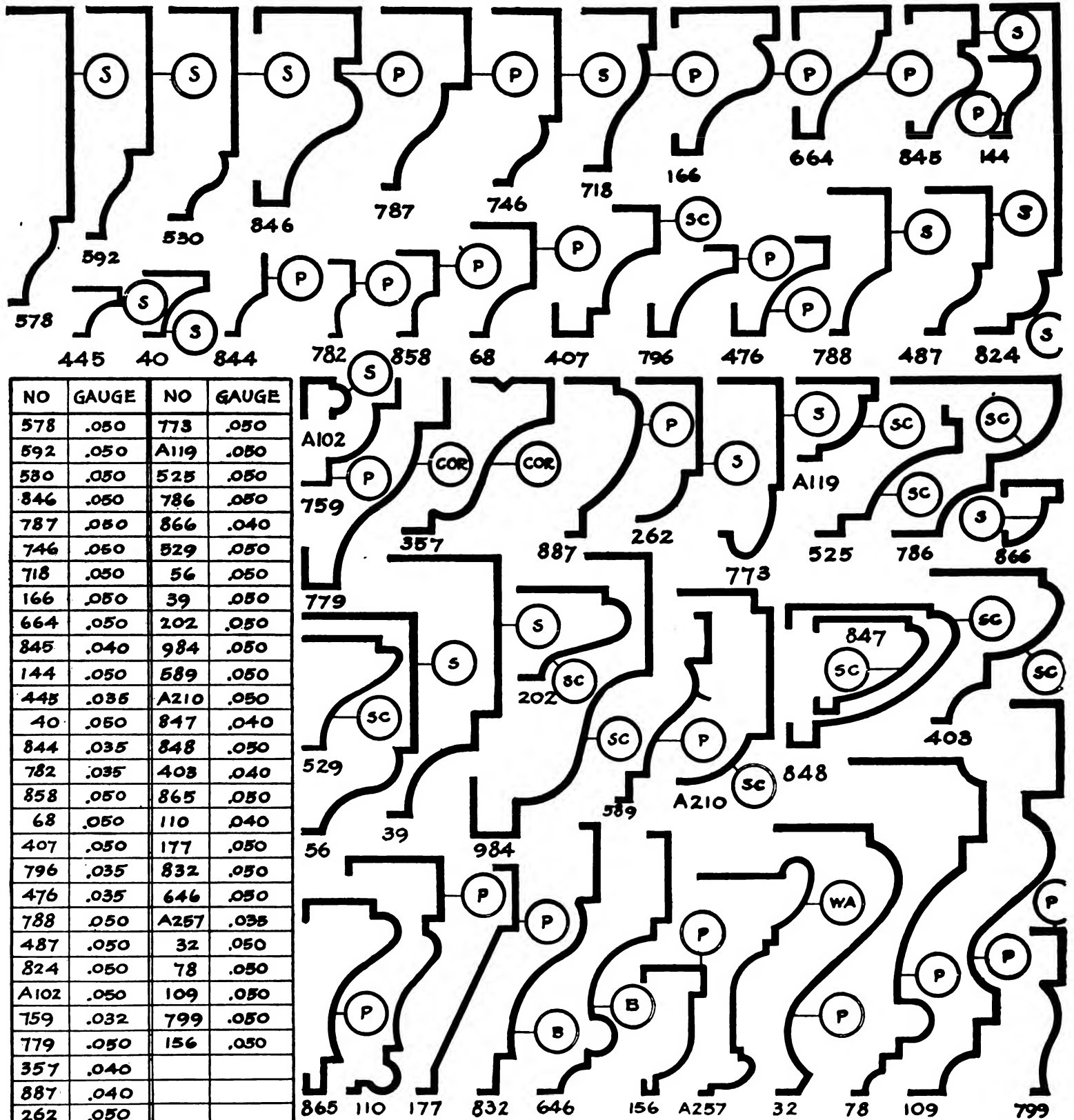
UTILITY—Practically unlimited; on account of lightness and superior finish they are adapted for all kinds of building trim and many lines of manufacture, such as metal furniture, automobile and metal specialties. **MATERIALS**—Drawn in steel, bronze, copper or brass. **QUALITY**—Made from special high-grade cold-rolled metal, our process making them more rigid than the much heavier hot-rolled shapes. **FINISH**—Outlines sharp and true to design. Perfectly smooth, practically ready for painting or plating. **LENGTHS**—Can be furnished up to 40 feet, but usual shipping lengths are from 10 to 20 feet. **DELIVERY**—Moldings from stock dies shipped prac-

tically on receipt of order, and special shapes will be made to order expeditiously.

We have selected from our stock of over 1100 moldings, some 130 of the most popular shapes, which we herewith present in FULL-SIZE PROFILES. We trust that this selection will fulfill the average requirements. Further information, estimates and catalog upon request.

KEY—For key to section letters see chart on opposite page.

ORDERING—Order moldings by number, specifying length desired, and whether in steel, bronze, copper or brass.



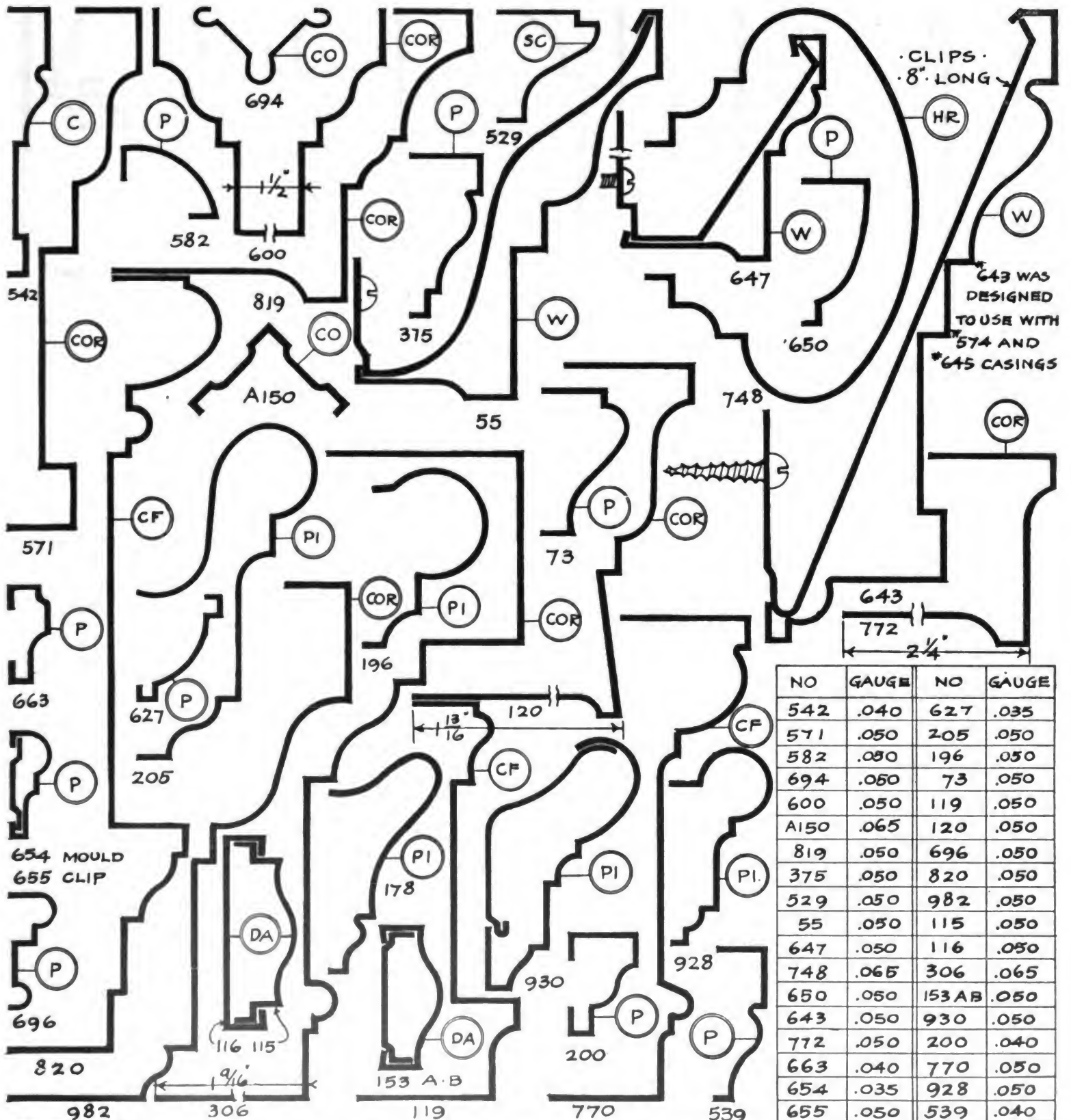
"A.B.C." SYSTEMS

ALL CUTS SHOWN ARE FULL SIZE

Continued on next page

KEY TO MOULDING SECTION MARKING

MARK	STYLE OF MOULDING	MARK	STYLE OF MOULDING	MARK	STYLE OF MOULDING
A	APRON	DA	DOOR ASTRAGAL	PC	PILASTER CASING
B	BASE	HR	HAND RAIL	S	STOP
C	CASING	J	JAMB	SC	SCRIBE
CO	CORNER	MO	MULLION CASING	WA	WAINSCOT
COR	CORNICE	P	PANEL	W	WIRE OR CONDUIT
CF	CORNICE FRIEZE	PI	PICTURE		

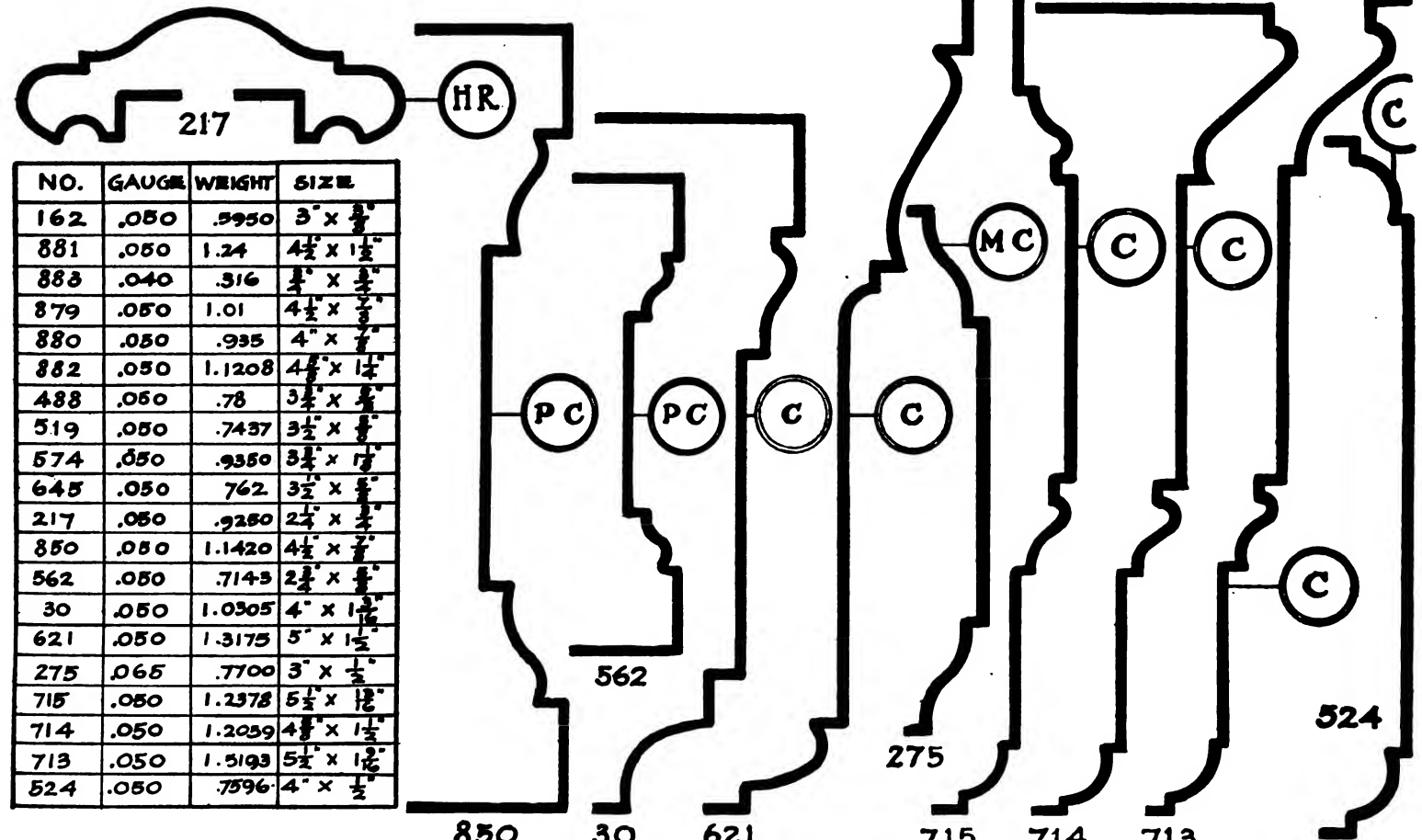
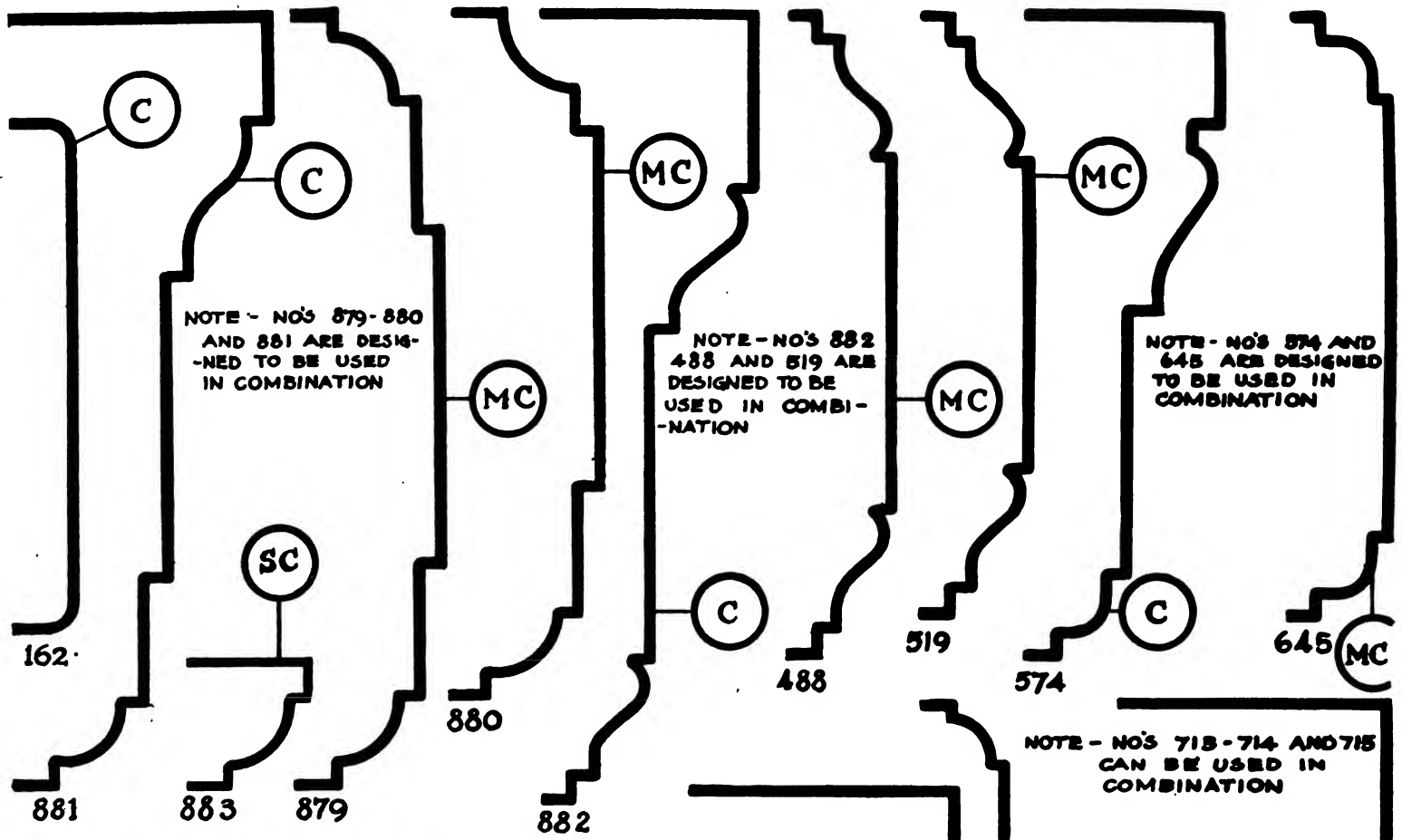


NO	GAUGE	NO	GAUGE
542	.040	627	.035
571	.050	205	.050
582	.080	196	.050
694	.050	73	.050
600	.050	119	.050
A150	.065	120	.050
819	.050	696	.050
375	.050	820	.050
529	.050	982	.050
55	.050	115	.050
647	.050	116	.050
748	.065	306	.065
650	.050	153 A.B	.050
643	.050	930	.050
772	.050	200	.040
663	.040	770	.050
654	.035	928	.050
655	.050	539	.040

"A.B.C." SYSTEMS

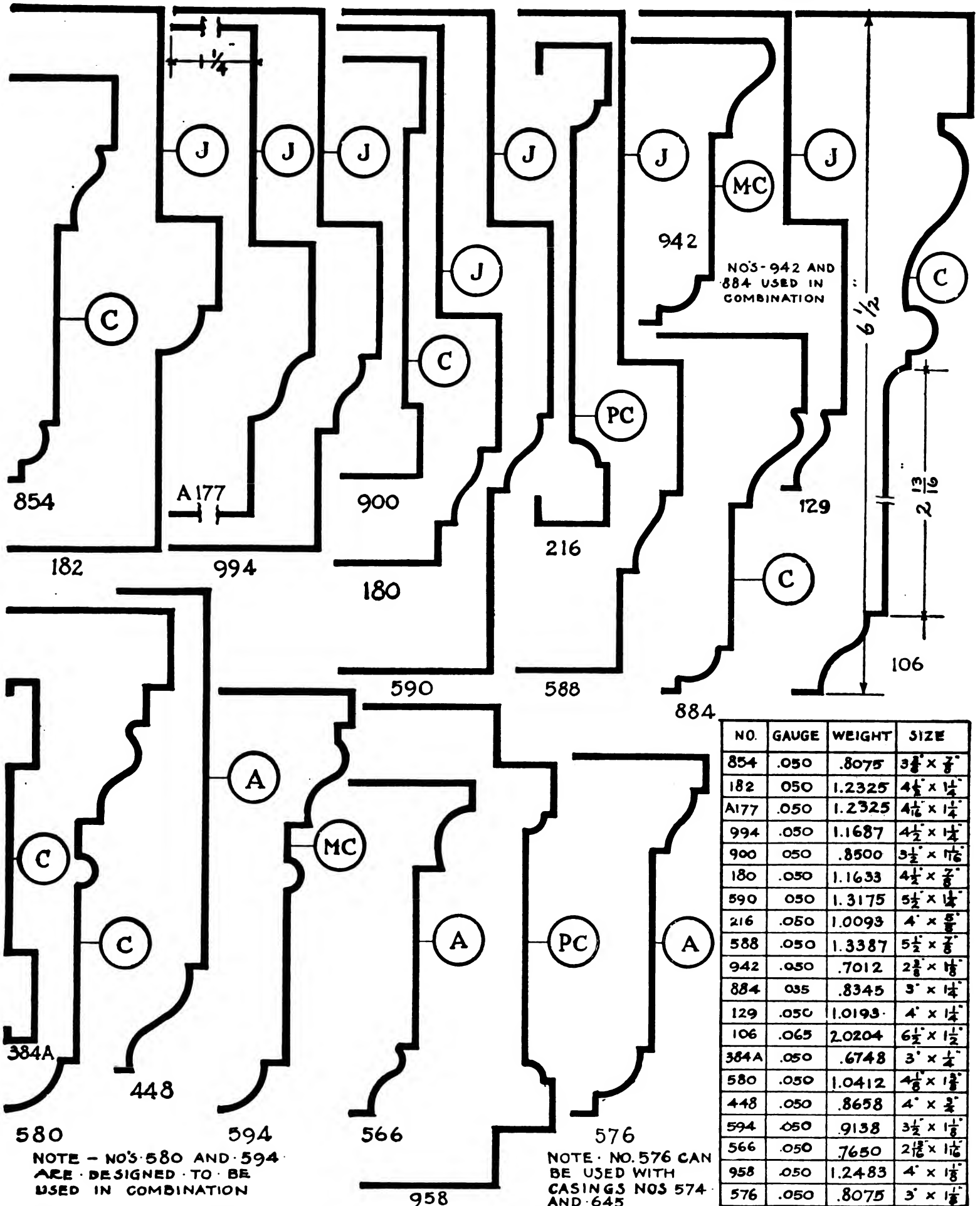
ALL CUTS SHOWN ARE FULL SIZE

Continued on next page



NO.	GAUGE	WEIGHT	SIZE
162	.050	.5950	3" x 1/2"
881	.050	1.24	4 1/2" x 1 1/2"
883	.040	.316	1/2" x 1/2"
879	.050	1.01	4 1/2" x 1/2"
880	.050	.935	4" x 1/2"
882	.050	1.1208	4 1/2" x 1 1/2"
488	.050	.78	3 1/2" x 1/2"
519	.050	.7437	3 1/2" x 1/2"
574	.050	.9350	3 1/2" x 1 1/2"
645	.050	.762	3 1/2" x 1/2"
217	.050	.9280	2 1/2" x 1/2"
850	.050	1.1420	4 1/2" x 1/2"
562	.050	.7143	2 1/2" x 1/2"
30	.050	1.0305	4" x 1 1/2"
621	.050	1.3175	5" x 1 1/2"
275	.065	.7700	3" x 1/2"
715	.050	1.2378	5 1/2" x 1 1/2"
714	.050	1.2039	4 1/2" x 1 1/2"
713	.050	1.5193	5 1/2" x 1 1/2"
524	.050	.7596	4" x 1/2"

ALL CUTS SHOWN ARE FULL SIZE



NO.	GAUGE	WEIGHT	SIZE
854	.050	.8075	3' x 3'
182	.050	1.2325	4' x 1 1/2'
A177	.050	1.2325	4' x 1 1/2'
994	.050	1.1687	4' x 1 1/2'
900	.050	.8500	3 1/2' x 1 1/2'
180	.050	1.1633	4' x 2'
590	.050	1.3175	5 1/2' x 1 1/2'
216	.050	1.0093	4' x 5/8'
588	.050	1.3387	5 1/2' x 5/8'
942	.050	.7012	2 3/8' x 1 1/8'
884	.035	.8345	3' x 1 1/4'
129	.050	1.0193	4' x 1 1/4'
106	.065	2.0204	6 1/2' x 1 1/2'
384A	.050	.6748	3' x 1/2'
580	.050	1.0412	4' x 1 1/8'
448	.050	.8658	4' x 3/4'
594	.050	.9138	3 1/2' x 1 1/8'
566	.050	.7650	2 1/2' x 1 1/8'
958	.050	1.2483	4' x 1 1/8'
576	.050	.8075	3' x 1 1/8'

"A.B.C." SYSTEMS

ALL CUTS SHOWN ARE FULL SIZE

Thorp Fire Proof Door Co.

"Thorp Richardson" Fire Proof Doors and Finish

1600-1616 CENTRAL AVENUE
MINNEAPOLIS, MINN.

REPRESENTATIVES IN SIXTY-FIVE PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

PRODUCTS—Manufacturers of "THORP RICHARDSON" FIRE PROOF DOORS AND FINISH for Office Buildings, Hotels, Hospitals, Sanitariums, Theaters, Schools, Court Houses, Business Blocks, Stores, and Private Dwellings; TRANSOMS; CORRIDOR WINDOWS; DRAWN MOLDINGS; METAL-COVERED FRAMES AND SASH

DETAIL—"Thorp Richardson" Doors are made in our standard detail and construction, or in special detail and standard construction, to follow architects' drawings. This enables them to be used with any scheme for which the buildings call.

BRONZE AND COPPER ENTRANCES

CONSTRUCTION—Fig. 1 shows the construction of the standard door, frame, and detail of one of the styles of trim. The panels are sunk by hydraulic pressure with one sheet to each side. The reinforcing band goes clear around the door, locking the sheets on all four edges. We fit and apply the hardware at the factory if same is furnished to us, or we will furnish same at list prices.

FINISH—"Thorp Richardson" Finish is either duplex plate, old copper, or brass; grained to match any of the natural woods; flat, galvanized, or solid copper.



FIG. 1—"RICHARDSON" STANDARD
SOLID-PANEL DOOR
Light Oak Finish



FIG. 2—SECTION THROUGH "RICHARDSON"
DOOR AND FRAME

SECTION THROUGH "RICHARDSON" DOOR AND FRAME—This shows the core of three thicknesses, laid crosswise, covered with asbestos; also, the seamless, hydraulic stamped panel. These single sheets on each side lap in a groove on all four edges, and are bound by a continuous steel band, further stiffening the door. Frames and trim are made in our standard metal-covered construction, to any detail.



FIG. 3—"RICHARDSON" STAND-
ARD GLASS-PANEL DOOR
Old Copper Finish

"A.B.C." SYSTEMS

Continued on next page

ILLUSTRATIONS—Entrances, to architects' details, in "Thorp Richardson" Construction, covered with **copper or bronze**, meet every requirement, and are a striking feature of many prominent public and private buildings.

ORNAMENTAL ENTRANCE DOORS—We would call special attention to the increasing use of "Thorp Richardson" Doors covered with *solid copper or bronze*, made to architects' details, for exterior entrances. These have all the advantages and the appearance of cast doors, without the extreme weight or cost.

CO-OPERATIVE SERVICE—Our estimates are based on the demands in each particular case, and we are always glad to make quotations on any work. Full-sized details and working drawings are furnished when required, and we invariably co-operate with the contractors to the end that everything shall be correct. Innumerable large buildings completely equipped without delay or a single replacement testify to the care we exercise.



FIG. 5—WEST BERKELEY BANK, WEST BERKELEY, CAL.
Dickey & Reid, Architects



FIG. 4—BRONZE ENTRANCE I. O. O. F. BUILDING, INDIANAPOLIS, IND.
Robush & Hunter, Architects



FIG. 6—NATIONAL BANK OF MERRILL,
MERRILL, WIS.
Harry W. Jones, Architect

Thomas Lee

Manufacturer of "Lee" Labeled Hollow Metallic Windows

Office and Factory

128-132 and 135-137 WEST SECOND STREET

CINCINNATI, OHIO

For our Catalog on Roof Ventilators see Section 16C, Cat. 3

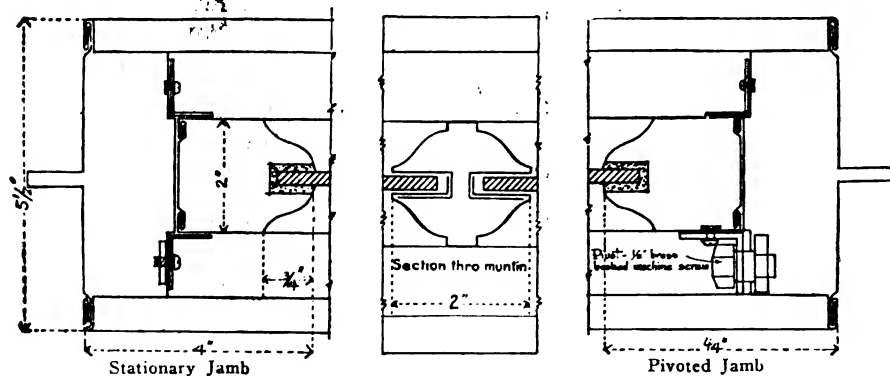
PRODUCTS—"LEE" LABELED APPROVED HOLLOW METALLIC WINDOW FRAMES AND SASH AND LABELED TIN-CLAD FIRE DOORS

"LEE" WINDOWS—These windows embody all the latest and most advanced methods of construction. They are built of galvanized sheet steel, with the exception of the inner reinforcing sill which is of cast iron, and are fireproof.

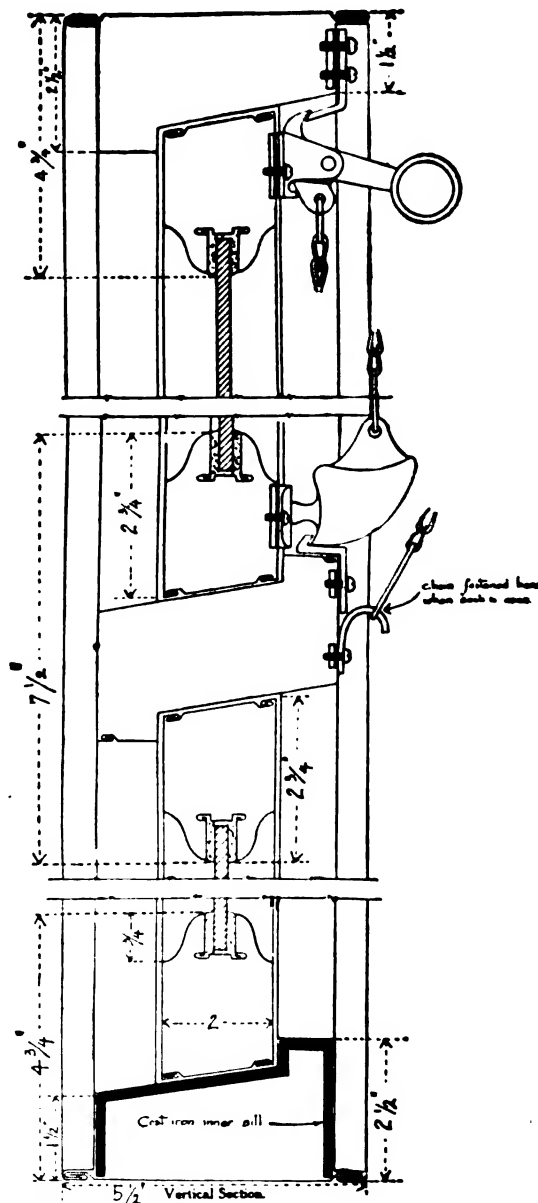
Special care has been exercised in their design to make them perfectly weatherproof. In construction they are simple, strong, and are of good appearance.

All sash, whether stationary, pivoted or double-hung, are easily set in or removed from the frames and can be glazed by removing the outside section and the glazing strip of the top rail.

OFFICIAL APPROVAL—The National Board of Fire Underwriters inspects and labels the following styles of "Lee" Hollow Metallic Windows before they leave the factory: Double Hung; Twin Double Hung; Stationary; Twin Stationary; Top Hinged; Pivoted Upper Sash; Pivoted Upper and Lower Sash; Pivoted Lower Sash; Single Pivoted Sash; Twin Pivoted Sash; Double Hung Window with Pivoted Transom; Double Hung Window with Hinged Transom.



SECTIONS OF THE "LEE" UPPER PIVOTED AND LOWER STATIONARY STYLE OF WINDOW



FIRE UNDERWRITERS' REGULATIONS—The regulations of the National Board of Fire Underwriters provide that labeled windows must be made to conform to the sample which has been tested and approved.

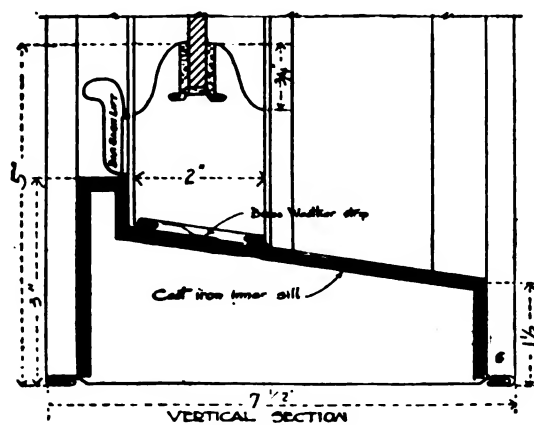
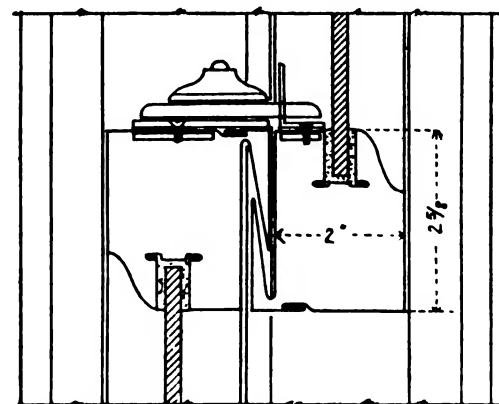
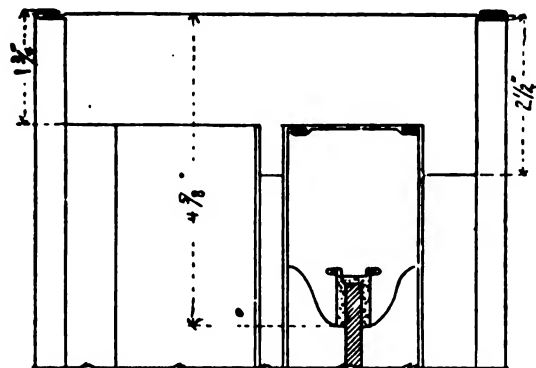
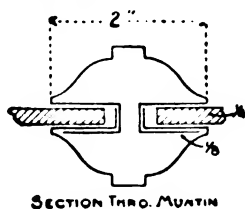
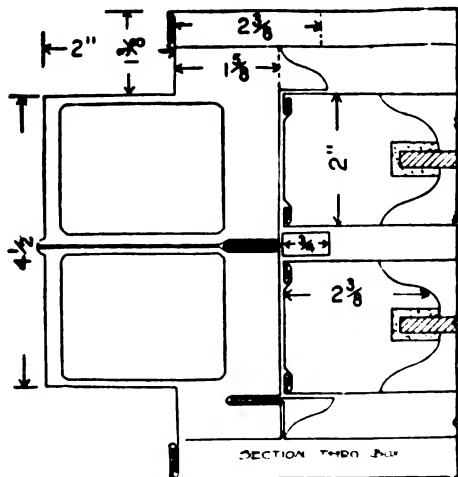
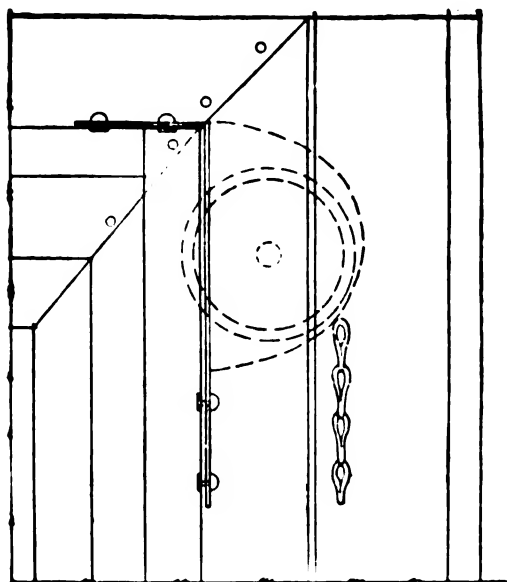
We are therefore not in a position to make windows according to architects' or engineers' specifications which may differ in construction from these regulations.

Printed directions of how to provide for and specify "Lee" Windows will be sent on request.

APPLICATION TO BUILDINGS—"Lee" Metallic Windows are adaptable for use in office buildings, hotels, theaters, factories, or any building in which window openings must be protected.

PRICES—Prices will be quoted upon receipt of plans and specifications or of a list giving number and sizes of windows wanted.

GUARANTEE—All work and materials are guaranteed to be the best of their respective kinds.



SECTIONS OF THE "LEE" DOUBLE-HUNG WINDOW

S. H. Pomeroy Co., Inc.

Successors to VOIGTMANN & CO., New York

Manufacturers of Metal Windows

MAIN OFFICE: 427 WEST 13TH STREET
NEW YORK, N. Y.

PRODUCTS—Manufacturers (under Patents) of Voigtmann & Co. FIREPROOF WINDOWS

TERRITORIAL NOTE—For information and prices necessary to prospective building operations in the Middle, Southern and Western States, address Voigtmann & Co., 445 West Erie Street, Chicago, Ill.

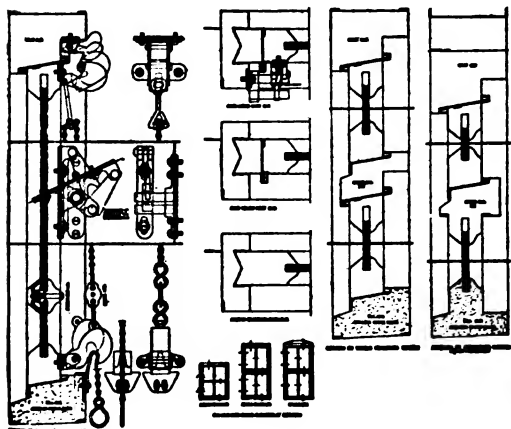
OFFICIAL APPROVAL—The following types of our construction have been approved by the National Board of Fire Underwriters Laboratories, Inc.:

"Double-hung (three types), counterbalanced; double-hung with pivoted transom; double-hung with hinged transom; twin double-hung, stationary; twin stationary; casement, top-hinged upper and stationary lower; pivoted upper sash; pivoted lower sash; pivoted upper and lower sash; single-pivoted sash; three pivoted sash; two upper sash pivoted, with stationary lower; special mullion window; twin pivoted sash; tilting sash."

STANDARD PIVOTED WINDOW—Lower sash is stationary. Upper sash is pivoted on $\frac{3}{8}$ -inch trunnions and so arranged that it can be revolved for cleaning. A stop prevents sash being tilted too far, so that a positive closing in case of fire is assured.

Pivoted Windows are also made in other combinations of fixed and swinging sashes, as described in the Underwriters' Label. See illustrations.

DETAILS—Our pivots and plates are made of cold-rolled strip steel. They are attached to sash rails and frame sides by button-head screws, screwed into heavy plate-iron reinforcements riveted within sash and frame.



"VOIGTMANN" STANDARD (SINGLE AND DOUBLE) PIVOTED WINDOW. AUTOMATIC CLOSING AND LOCKING FIRE WINDOW. IN GALVANIZED IRON OR COPPER

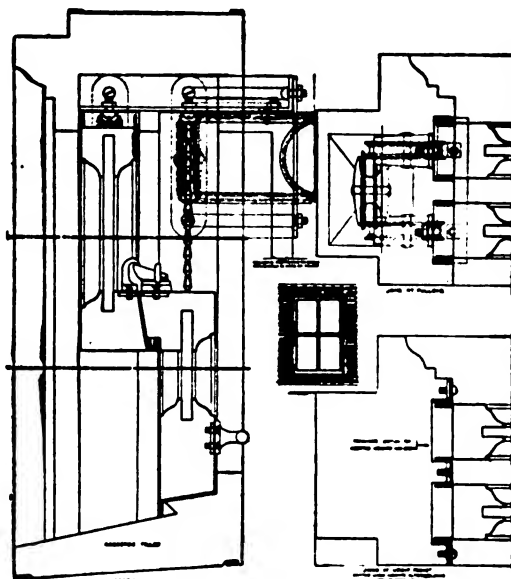
"A.E.C." SYSTEMS

Pivots are adjustable; 60 per cent of sash weight is below point of revolution.

When open, window is held in position by a chain running through an eye attached to upper lock and then down to lower lock. This chain is attached to lower lock by a fusible link that will melt at 135 degrees, thus releasing sash which will swing shut and lock.

The locks are of our own design and manufacture. Made entirely without springs. The cast portions are malleable, and the housing and small parts are stamped metal. Locks are fitted to both top and bottom rails of the sashes.

Hollow air-chamber construction throughout, and made of 24-gauge galvanized sheet iron. Heavier gauges of iron, or copper, furnished on special order.



DETAIL OF NO. 40 DOUBLE-HUNG WINDOW

ADJUSTABLE WEATHER GUIDE DOUBLE-HUNG WINDOW—We have designed and perfected this window (shown herewith in detail) to be used in buildings intended for constant human occupancy. It is perfect in its adjustment for good weathering, easy operation and absolute tightness against entrance of wind or dust.

This window can be equipped to close automatically under our exclusive Stephens Patent No. 932539. This Automatic Closing Device is so conclusively good and sure in its operation that we specially recommend its use. Its efficiency under fire conditions is absolute and certain.

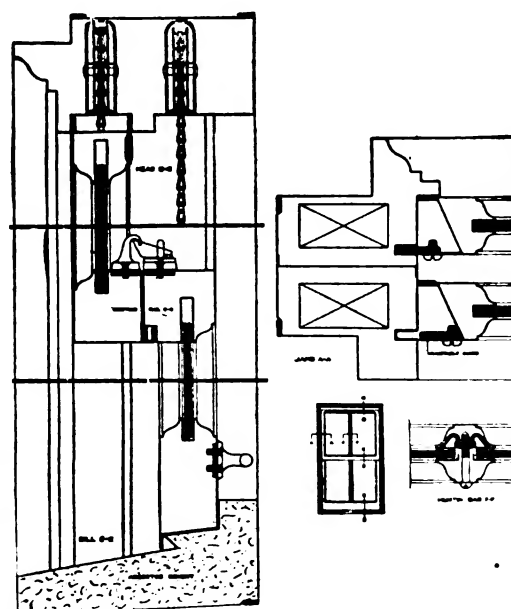
DETAILS—Corresponding to our adjustable weather guide in sash (iron $\frac{1}{8}$ " x $1\frac{3}{8}$ ", full height of sashes) is a lining for groove $\frac{3}{4}$ " deep in and full height of window jamb. This allows smooth working contact of sash and jamb, thus making a wind-tight connection that will not rattle. Also, the hood weathering at cross rail is a feature of extreme importance.

Hollow air-chamber construction throughout.

Special attention is paid to selected hardware, latest designs of sash pulleys or wheels and other window devices covered by Patents set forth below.

PATENTS—Our Fireproof Windows are manufactured under the following patents:

- No. 600,186—March 8, 1898
- No. 621,542—March 21, 1899
- No. 626,698—June 13, 1899
- No. 657,996—September 18, 1900
- No. 702,754—June 17, 1902
- No. 716,151—September 16, 1902
- No. 718,403—January 13, 1903
- No. 753,765—March 1, 1904
- No. 816,041—March 27, 1906
- No. 867,925—October 8, 1907
- No. 932,539—August 31, 1909



"VOIGTMANN" ADJUSTABLE WEATHER GUIDE DOUBLE-HUNG WINDOW. BOX FRAME FIRE WINDOW. MADE OF COPPER OR GALVANIZED IRON

CLASSIFICATION PAGE OF
SECTION 17

Protective Doors and Shutters (Special Design) and General Safety Appliances Against Accident, Fire, Lightning, etc.

(Standard Underwriters Doors and Windows see Section 16)

Section Synopsis

A. Special Warehouse and Elevator-Car and Shaft Doors, horizontal and vertical-sliding; Vertical-folding Warehouse Doors or Shutters; Rolling Steel Doors and Shutters; Automatic Elevator-Wellhole Doors and Gates; Protective Window Screens

B. Patent Fire Escapes, stationary and portable; Fire-fighting Apparatus and Equipment; Hose, Hose-Reels, Standpipe

Valves; Fire Engines; Fire Hydrants; Portable Extinguishers, mechanical and chemical; Lightning Rods; Window-Cleaners' Belts; Safety-Exit Door Devices; Safety Stairs Treads, Door Saddles, Platforms, etc.; Theater Steel and Asbestos Curtains; Automatic Sprinkler Systems; Floor and Roof Scuppers, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX REGULAR CLASSIFICATION			Cat. No.		Manufacturers having Catalog data in this Section		Sub-Index Numbers				
							1 to 12	13 to 24	25 to 36	37 to 48	49 to 72
A	1	Automatic elevator-wellhole doors and gates	51	Jewel safes (S. 40 B)	A 1	Boston Art Metal Co.	2				
	2	Elevator door mechanism	52	Locking casement operator (S. 19 A)		Boston, Mass.					
	3	Elevator shaft doors, vertical or horizontal-sliding	53	Rods, bolts, stirrups, etc. (S. 18)	A 3	Variety Mfg. Co.	1		25		50
	4	Rolling steel doors and shutters	54	Steam exhaust head (S. 28 C)		Chicago, Ill.	3				53
	5	Trucking device for freight elevators	55	Wrought iron doors, shutters, window guards, etc. (S. 15 A)			4				54
	6	Warehouse doors, vertical, horizontal, horizontal-sliding, sliding or folding			B 1	Vonnegut Hardware Co.	5				
	7	Window screens, protective				Indianapolis, Ind.	6		27		49
B	20	Fire engines, steam, chemical			A 2	Wilson Mfg. Co., Jas. G.	4				51
	21	Fire hydrants				New York, N. Y.	6				52
	22	Fire pumps, steam, electric									55
	23	Hose, hose reels, brackets, trucks									
	24	Lightning rods, copper, steel									
	25	Patent fire escapes, portable, stationary									
	26	Portable extinguishers, hand pumps, chemical, mechanical									
	27	Safety-exit door fixtures, bolts, etc., fire, panic									
	28	Safety treads, stairs, saddles, flooring, etc.									
	29	Scuppers, floor, roof									
	30	Sprinkler systems, automatic									
	31	Standpipes, valves, street couplings									
	32	Theater asbestos curtains									
	33	Window-cleaners' belts									
SPECIAL CLASSIFICATION			Cat. No.		Manufacturers having Catalog data in this Section		Sub-Index Numbers				
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.							1 to 12	13 to 24	25 to 36	37 to 48	49 to 72
	49	Automatic door holder (S. 19 A)	B 3	Anti-Slip Metal Tread Co.					28		
	50	Fireproof all-metal and metal-clad doors, windows and shutters (S. 16 D)	B 2	Automatic Sprinkler Co. of America					30		
				New York, N. Y.							

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 12	13 to 24	25 to 36	37 to 48	49 to 72		1 to 12	13 to 24	25 to 36	37 to 48	49 to 72		1 to 12	13 to 24	25 to 36	37 to 48	49 to 72
Ajax Fire Engine Works.... New York, N. Y.		20										Newhall, Henry B..... New York, N. Y.	3 6				50
Allen Mfg. Co., W. D..... Chicago, Ill.		23				Eastern Bridge & Structural Co. Worcester, Mass.			28			Nielsen & Co., L. H. (Geo. N. Coe, Agent) New York, N. Y.	1 3 4 6		27		
American Abrasive Metals Co. New York, N. Y.			28			Eddy Valve Co..... Waterford, N. Y.		21	31			Norwood Engineering Co.... Florence, Mass.		21			
American Fire Apparatus Co. New York, N. Y.		23	25 26			Forster Fire Equipment Co.. New York, N. Y.		20 23	26 30			Ogden Iron & Steel Mfg. Co.. New York, N. Y.	4 6				
American Foundry & Mfg. Co. St. Louis, Mo.		21	31			General Fire Extinguisher Co. Providence, R. I.			30			Peelle Co..... New York, N. Y.	1 3 6				
American LaFrance Fire En- gine Co. Elmira, N. Y.	3 4 6	20 21 23	26 31			Grant Pulley & Hardware Co. New York, N. Y.	3 4 6					Peter & Bro., F. N..... Newside, Pa.			25		
American Mason Safety Tread Co. Boston, Mass.				28		Halsted, Joseph..... Chicago, Ill.			25 28			Phoenix Iron Works..... Portland, Ore.		21			
American Metal Hose Co.. Waterbury, Conn.		23				Hanke Iron & Wire Works.. Chicago, Ill.	1 3 6		25 28 29 31		50	Reliance Ball-Bearing Door Hanger Co. New York, N. Y.	3 6				
Badger Fire Extinguisher Co. Boston, Mass.		20	26			Harris Fire Apparatus Co.. New York, N. Y.		23	25 26 28 33			Rensselaer Valve Co..... Troy, N. Y.		21			
Baileys Iron Works, John.. Philadelphia, Pa.			25 31		50	Hayward & Co., S. F..... New York, N. Y.		20 23	25 26 31			Richey, Browne & Donald.. New York, N. Y.	1 3		28		50
Bardale Bros..... New York, N. Y.	1					Hecla Iron Works..... Brooklyn, N. Y.	3				50	Richmond Safety Gate Co.. Richmond, Ind.	1 3 6				50
Bayley Mfg. Co..... Milwaukee, Wis.			25			Helmick Foundry - Machine Co. Fairmont, W. Va.	1 3					Rieseck, P..... Alleghany, Pa.	4 6		25		
Black-Woods Mfg. Co..... Peoria, Ill.	1					Howard & Morse..... New York, N. Y.	3					Rochester Automatic Eleva- tor Door Co. Rochester, N. Y.	1 3				
Boston Woven Hose & Rub- ber Co. Cambridge, Mass.		23				Howard Iron Works..... Buffalo, N. Y.		21				Rumsey & Co..... Seneca, N. Y.		22			
Boyd & Brother, James.. Philadelphia, Pa.		20 23	26			Howard Mfg. Co., J. M..... Washington, D. C.		23				Sagax Wood Co..... Baltimore, Md.	4 6				
Brombacher Iron Works.... Los Angeles, Cal.	1 3 6	24	25 27 28 31			Hunkins-Willis Lime & Ce- ment Co. St. Louis, Mo.	3				50	Smith Mfg. Co., A. P..... East Orange, N. J.		21	31		
Canton Mfg. Co..... Canton, Ohio	3 6				50	Jiffy Fire Hose Rack Co.... New York, N. Y.		22 23	31			Snow, Walter B..... Boston, Mass.		21	30 31		
Chapman Valve Mfg. Co.. Indian Orchard, Mass.		21	31			Johnson Mfg. Co., Geo. W.. Kansas City, Mo.	4 6					Speidel, J. G..... Reading, Pa.	1 3				
Chickasaw Iron Works..... Memphis, Tenn.		21				Kansas City Wire & Iron Works Kansas City, Mo.	6		28			Stewart Iron Works..... Covington, Ky.	4 6		28		50
Christopher & Simpson Ar- ch'l Iron & Foundry Co.. St. Louis, Mo.			25 28 29			Kennedy Valve Mfg. Co.... Elmira, N. Y.		21	31			St. Louis Fire Door & Sheet Metal Works St. Louis, Mo.	4 6				
Clay John H..... Philadelphia, Pa.		20 23	31			Kinnear Mfg. Co..... Columbus, Ohio	4					Taylor & Dean..... Pittsburg, Pa.			23 26 28		
Cliff & Guilbert Co..... New York, N. Y.		23				Knickerbocker Elevator Gate Co. New York, N. Y.	1 3					Tea Tray Co. of Newark, N. J. Newark, N. J.		20	26		
Coburn Trolley Track Mfg Co. Holyoke, Mass.	3 4 6		25			Knoburn Co..... Hoboken, N. J.	3 6				50	Thompson Bros. Co..... Philadelphia, Pa.			25		
Coffin Valve Co..... Boston, Mass.		21	31			Kupferle Foundry Co., John C. St. Louis, Mo.		21				Thompson, Hervey..... New York, N. Y.	1 3 4 6		23 28		
Cole, Geo. N..... New York, N. Y.	3 6					Laetzer Valve & Mfg. Co.... Monroeton, Pa.		21	25			Tower Iron Works, James H.. Providence, R. I.			25 28		
Corbin, P. & P..... New Britain, Conn.			27			Ludlow Valve Mfg. Co..... Troy, N. Y.		21	31			Underwriters Hatch Door Co. Chicago, Ill.	1 3 4 6				50
Crocker National Fire Pre- vention & Eng. Co. New York, N. Y.		20	25 26 27			McLean, John..... New York, N. Y.	4					Universal Safety Tread Co.. Boston, Mass.			28		
Davy Automatic Fire Escape Co. Syracuse, N. Y.			25			Machwirth Bros. Co..... Buffalo, N. Y.	3 4				50	Victor Mfg. Co..... Newburyport, Mass.	6				
Dimond, Thos..... New York, N. Y.	3 4 6		25 28		50	Marshall Bros..... Pittsburgh, Pa.	1					Whitner Safety Device Co.. New York, N. Y.			33		
Dodd & Struthers..... Des Moines, Iowa		24				Meyers Mfg. Co., Fred J.... Hamilton, Ohio	1 3 6		25 28		50	Wirt & Knox Mfg. Co..... Philadelphia, Pa.		23			
Douglas, George B..... New York, N. Y.	1 3					Morewood Standard Safety Devices Co. New York, N. Y.			27 33			Wood & Co., R. D..... Philadelphia, Pa.		21 22	31		
Dover Boiler Works..... Dover, N. J.			31									Wright Wire Co..... Worcester, Mass.		24			
Dow Wire & Iron Works Co.. Louisville, Ky.	3		25														
Dusing & Hunt..... Buffalo, N. Y.	1 3 6				50												

Boston Art Metal Company

Manufacturers of Elevator Mechanism

Office and Factory—L AND FIRST STREETS
BOSTON, MASS.

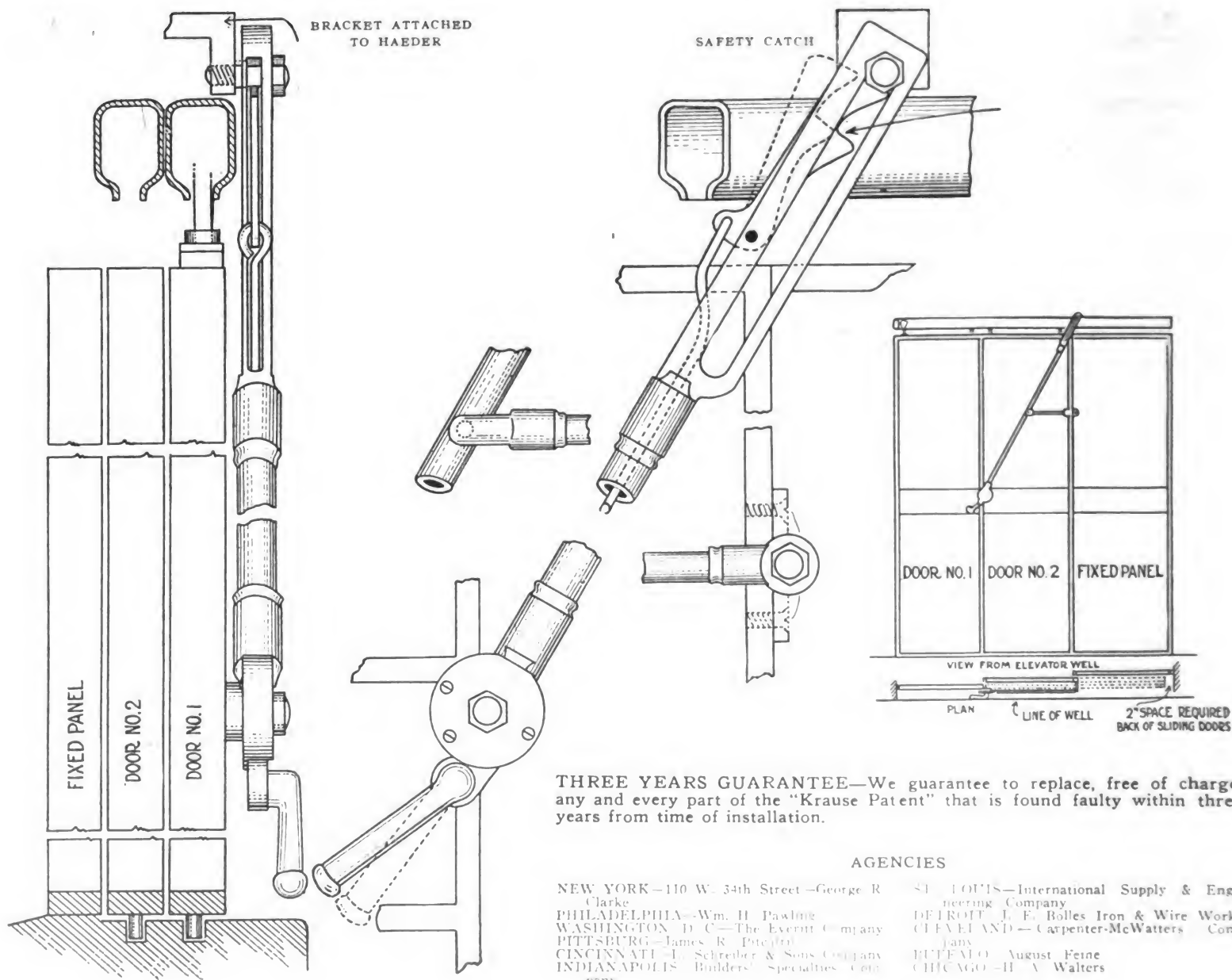
PRODUCT—"KRAUSE PATENT" for operating and locking two-speed elevator doors. Protected by U. S. Patent

DESCRIPTION—A mechanical device for the simultaneous operation of two elevator doors which move in the same direction. The first door travels at double the speed of the second. The device also automatically locks the doors when they are closed, and the lock is released by the same motion that opens the door.

SAFETY CATCH—This occurs when the doors have reached the point of three inches of being closed. This eliminates any

possibility of an accident in the wells caused by the doors not being securely closed, providing an absolute lock which cannot be opened except by operator. The lock acts automatically both when the doors are closed and at the Safety Catch.

ADVANTAGES—Absolute and instantaneous control of the doors, with the attendant advantages of greater safety, ease and rapidity. The use of two-part elevator doors greatly increases the efficiency of the elevator service. The Safety Catch will prevent a considerable loss of time caused by the operator returning to close doors securely. The "Krause Patent" affords the very best of protection to the owners, and gives the tenant the very highest degree of efficiency.



THREE YEARS GUARANTEE—We guarantee to replace, free of charge, any and every part of the "Krause Patent" that is found faulty within three years from time of installation.

AGENCIES

NEW YORK—110 W. 34th Street—George R. Clarke
PHILADELPHIA—Wm. H. Pawling
WASHINGTON, D. C.—The Everitt Company
PITTSBURGH—James R. Pritchard
CINCINNATI—L. Schreiber & Sons Company
INDIANAPOLIS—Builders' Specialties Company

ST. LOUIS—International Supply & Engineering Company
DETROIT—J. E. Bolles Iron & Wire Works
CLEVELAND—Carpenter-McWatters Company
BUFFALO—August Feine
CHICAGO—H. A. Walters

"A.B.C." SYSTEMS

Jas. G. Wilson Mfg. Co.

Manufacturers of Special Protective Rolling Doors and Shutters

332 So. Michigan Avenue
CHICAGO, ILL.

3 WEST 29th STREET
NEW YORK, N. Y.

Factory
NORFOLK, VA.

For Our Wood Rolling Partitions and Wardrobes see Section 21C, Cat. 2
For Our Venetian Blinds and Awnings see Section 43C, Cat. 3

PRODUCTS—ROLLING DOORS AND SHUTTERS of Steel or Wood; "SALAMANDER" ROLLING SHUTTERS AND SWING SLIDING DOORS

DESCRIPTION—We make three styles of Steel Rolling Doors and Shutters as shown and described herewith. These different styles are made of various gauges of Steel according to the purposes required and sizes of openings to be covered. They are operated in a variety of ways: some simply push up and pull down, like a roller shade; some are worked by a winch with gear or chain-hoist, and others with heavy gear or electric motors.

There have been thousands of our Rolling Doors installed in the past 35 years, some as large as 35 feet by 20 feet, and even up to 107 feet high, and we can refer to them.

On special problems involving the closing of any kind or size of openings with Rolling Doors, communicate with us.

WILSON'S CORRUGATED STEEL ROLLING DOORS

—Are designed, so that every part and crevice can receive its coat of paint without trouble or difficulty. These Steel Rolling Doors will stand a good deal of knocking about, and a few dents or buckles will not interfere with their operation. Any large hole can be patched in a few hours.

Specify Wilson's Double-Edged Corrugated Steel Rolling Doors and Shutters.

WILSON'S INTERLOCKING-SLAT ROLLING DOORS AND SHUTTERS—Style No. 1—As shown, are designed to secure the maximum of lateral strength and resistance to wind pressure. A square foot of slats contains two square feet of steel disposed so as to avoid all sharp bends, thereby adding greatly to the durability of the door. All slats of this style are of 22 U. S. gauge.

Increasing the thickness of the steel does not necessarily add to the durability or lateral strength of the door. The shape of the slat has very much to do with this, and should be considered, as well as the gauge, when specifying.

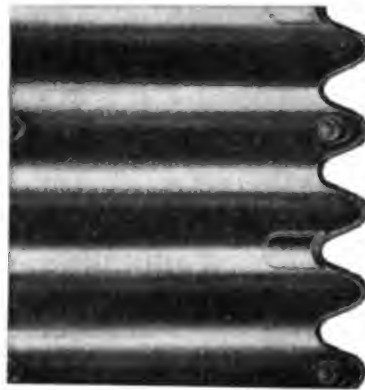
Our Fire Doors are approved for use in the most hazardous places, such as elevator and staircase openings.

Our Engineers' Handbook and our Standard Detail Sheets on Rolling Doors and Shutters mailed free on request

"A.B.C." SYSTEMS

Style No. 2—As shown, is designed for extremely wide openings. The large rounded hooks give it great lateral strength and are shaped so as to provide a clear space between the outer and inner hook, so that a violent blow from the outside sufficient to indent the outer hook would not penetrate to the inner hook and cause a stiff joint.

NEW ANCHOR DEVICE—These anchors, as shown, are placed on each side of the door, two or three feet apart, and are most effectual in preventing the door being blown out by the wind in a heavy gale. They obviate the very deep grooves necessary for this purpose—a practice obviously objectionable. We make our No. 2 Slat in 20, 18 and 16 U. S. gauge.



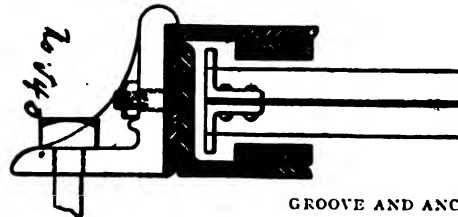
WILSON'S DOUBLE EDGED CORRUGATED



INTERLOCKING SLAT. STYLE NO. 1



INTERLOCKING SLAT.
STYLE NO. 2



GROOVE AND ANCHOR



WILSON'S ROLLING WOOD DOORS—As shown below, have the slats held together in close contact at all times, and proper provision is made for their swelling or shrinking from atmospheric changes. This action is automatic and perfect. A Rolling Wood Door constructed in any other way will prove unsatisfactory.



B. & O. ROUND HOUSE AT BALTIMORE, MD.
Equipped with Wilson's Rolling Wood Doors, fitted with wire glass panels and wicket doors

A special feature in our Round House Door is the Safety Wicket. This coils up with the door and has many obvious advantages over a door on hinges. For detail of construction see page 32 in large Catalogue.

Variety Manufacturing Company

Manufacturers of

Cross Horizontal Folding Doors and Automatic Fireproof Freight Elevator Doors

CARROLL AND SACRAMENTO AVES.

CHICAGO, ILL.

Eastern Representative—

George N. Cole, 1328 Broadway, New York

PRODUCTS—CROSS ELEVATOR AND FREIGHT-HOUSE DOORS, CROSS HORIZONTAL FOLDING DOOR (Patented), CROSS COUNTER-BALANCE FREIGHT ELEVATOR (Patented), CROSS IMPROVED MEAKER ELEVATED DOOR (Patented), CROSS COMPOUND SLIDE-UP DOOR, UNDERWRITERS' IRON FIRE-DOORS and TIN-CLAD FIRE-DOORS, VAULT DOOR AND ROLLING STEEL SHUTTERS, FIRE ESCAPES

Also, STIRRUPS, ANCHOR-BOLTS, RODS, etc.; BLACKSMITH and WROUGHT IRON WORK, STEEL FLOOR CLIPS AND DOANE STEAM EXHAUST HEADS

CROSS HORIZONTAL FOLDING DOOR—This door is designed for use in railroad freight houses, car shops, express houses, warehouses, docks, piers, cold storage plants, wagon and car entrances, shipping platforms, baggage rooms and garages.

OPERATION—Door is divided horizontally into two sections. Top half secured to wall by heavy hinges and bolted to bottom section by substantial strap hinges. At lower corners of bottom section are guide rollers rotating upon shafts, housed in special shoe castings, secured to door by through bolts. Attached directly to shoes are heavy plates which serve the double purpose of retaining bottom of door against wall and preventing same from being blown inward as door is closed, and also for attaching counterbalancing weight chains. These chains pass up sides of door, one passing over a sheave, mounted on a special bracket, to opposite side of door, where both chains pass over pulleys to a common counterbalancing weight, which in all cases is enclosed in a weight-box. At sides of doors are angle guides upon which the guide rollers travel when door is opened or closed. These angle iron guides form a 2-inch rabbet into which door fits very tight when closed. Door is readily opened or closed by means of a pair of handles at center, one at either side about half way up. These also serve the purpose of locks when door is closed by meshing into a slot in the angle guide. Where opening is not larger than 6 ft. x 6 ft., or within reach of an ordinary man, door can readily be opened or closed by hand. Where opening is larger than this a special differential gear-hoisting device, operated by means of an endless chain, is used. This device makes the door adaptable to any size opening. Door can be hung on either outside or inside of building. When hung on outside it forms a canopy over opening.

SUPERIOR POINTS—Simple in every point; easy to operate; constructed of any material or combination of materials; glass can be installed in upper half, thus doing away with the necessity of a transom; entire mechanism in plain view; any ordinary mechanic can repair; cost of maintenance practically nothing; takes up no valuable space, whether open or closed.

ILLUSTRATIONS—In construction No. 505 plain or wire glass may be used. It is the only door which can be paneled with glass without taking up valuable space.

"A.B.C." SYSTEMS



CONSTRUCTION NO. 505

Standard Wood Cross Horizontal Folding Door paneled in upper half with glass (plain or wire glass may be used). This is the only door which can be paneled with glass and which takes up no valuable space when either opened or closed.



CROSS HORIZONTAL DOOR, SHOWING USE IN GARAGE
Note position of doors closed and partly opened



CROSS HORIZONTAL DOOR, SHOWING DOORS IN GARAGE OPENING
Note glass in upper half; wicket door in lower half

Continued on next page

THE VAMANCO COUNTERBALANCE FREIGHT ELEVATOR DOOR
(Patented)

MANUFACTURED BY THE VARIETY MANUFACTURING COMPANY

For Use in Freight Elevator Shafts

Approved and labeled by THE LABORATORIES OF THE NATIONAL BOARD OF FIRE UNDERWRITERS

CONSTRUCTION—This door is built in two equal parts of corrugated iron riveted to angle iron frames, the two parts being connected by strong flexible chains, which travel over ball-bearing steel sheaves housed in heavy wrought steel brackets, brackets being riveted to the guides.

OPERATION—This door operates in guides mounted on the inner face of elevator shaft. In opening, the top half moves upward, the bottom half downward, both halves being equal in size and weight, makes the door self-counterbalancing.

AUTOMATIC DEVICE—The door can be equipped with a device which will automatically close it as the car leaves the floor, insuring a closed shaft at all times.

TRUCKING DEVICE—This device supports the door as trucks are being taken on or off of the car.

It receives and sustains any jar or shock and makes it possible to take trucks on or off of the car with any size load.

COUNTERBALANCED ELEVATOR DOOR

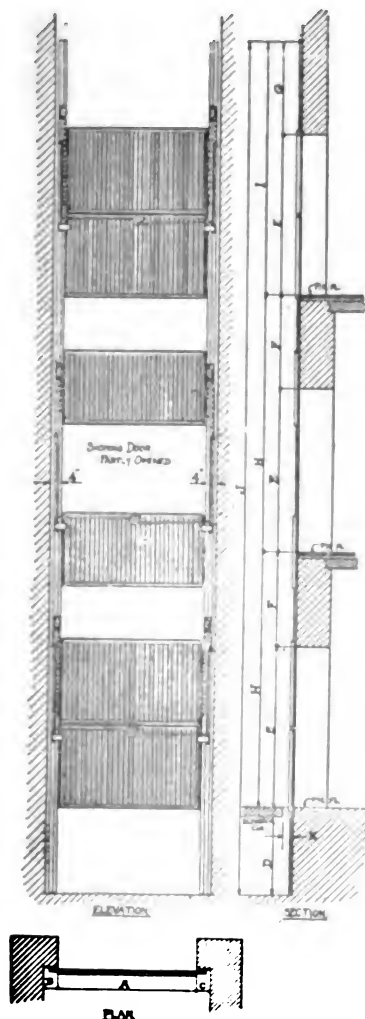
Inspected by
UNDERWRITERS' LABORATORIES, INC.
No. 1001.

FACSIMILE OF UNDERWRITERS' LABEL FOR THE VAMANCO COUNTERBALANCE FREIGHT ELEVATOR DOOR

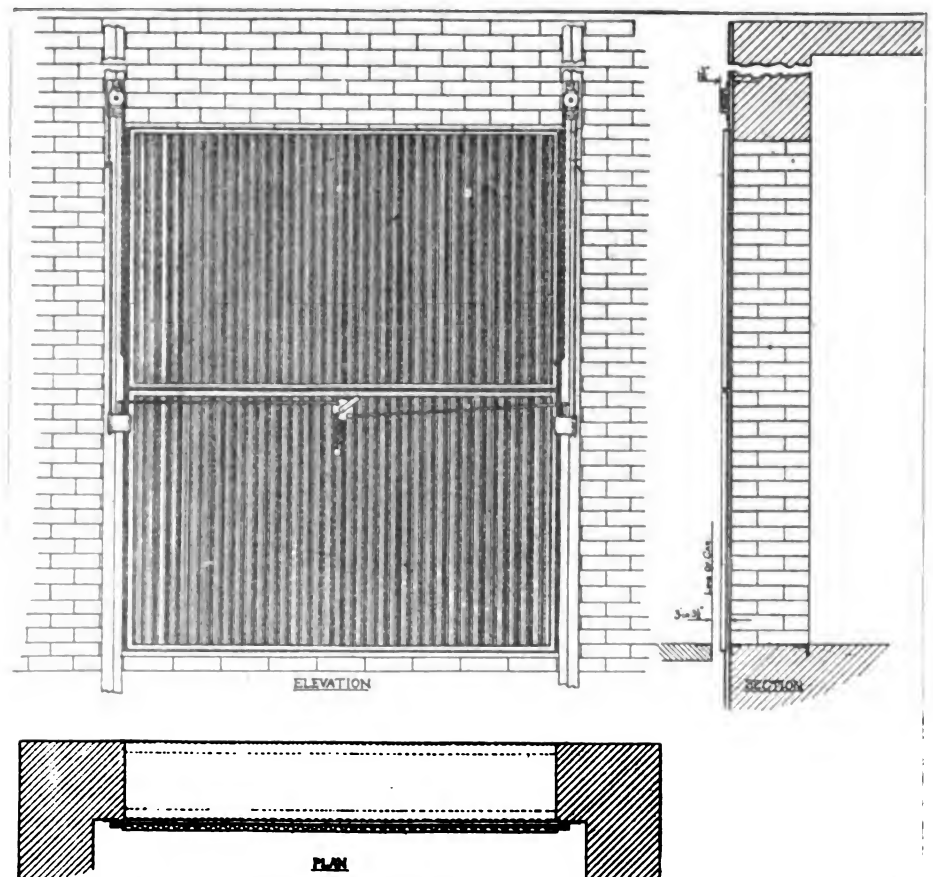
The Best, the Strongest, the Only Door for Freight Elevator Shafts.

Protect your freight Elevator Shaft Openings with the VAMANCO COUNTERBALANCE FREIGHT ELEVATOR DOOR and get the lowest rate of insurance possible; the most durable of freight elevator doors; the easiest door to operate; the simplest door for the purpose; the most for your money; a Door and Safety Gate combined; a guarantee that your shaft openings will be closed at all times.

SPECIFICATIONS—At each opening in freight elevator shaft furnish and install the VAMANCO COUNTERBALANCE FREIGHT ELEVATOR DOOR as manufactured by the VARIETY MANUFACTURING COMPANY, Sacramento and Carroll Avenues, Chicago, Ill., these doors to be installed by the manufacturers.



Showing a line of Doors and section through shaft.



Construction No. 565.

This cut shows our Standard Single Guide Construction Corrugated Door as it looks when closed, looking at the door from the inside of the shaft.

Vonnegut Hardware Co.

Distributors of

Von Duprin Self-Releasing Fire Exit Devices

INDIANAPOLIS, IND., U. S. A.

Branches

CHICAGO, ILL.
 John C. Bold, 216 S. Jefferson St.

NEW YORK, N. Y.
 Grant Pulley and Hardware Co., 3 W. 29th St.

PHILADELPHIA, PA.
 T. B. & H. S. Hendrickson, 521 Commerce St.

BOSTON, MASS.
 Grant Pulley & Hdw. Co., Tremont Bldg.

LONDON, E. C. ENG.
 H. G. McMicken, 14-20 St. Mary Axe

PORTLAND, ORE.
 A. J. Capron, 17-18 Ainsworth Bldg.

SEATTLE, WASH.
 F. C. Crowe & Co., 409-413 Globe Bldg.

SPOKANE, WASH.
 F. T. Crowe & Co., So. 164 Madison St.,

TACOMA, WASH.
 F. T. Crowe & Co., 1005 A St.

WINNIPEG, MAN.
 Mackenzie Bros., 244 Princess St.

Also Agents for the Provinces of Alberta
 and Saskatchewan

COLUMBUS, OHIO
 R. L. Watson, 407 Brunson Bldg.

DENVER, COLO.
 George P. Heinz & Co., Chamber of
 Commerce

LOS ANGELES, CAL.
 W. H. Steel, 822 Central Bldg., 6th &
 Main Sts.

FORT WORTH, TEXAS
 Howell-Irvine Sales Co.

VANCOUVER, B. C.
 William N. O'Neil & Co., 623 Pender St.

FOR SALE BY ALL HARDWARE DEALERS

PRODUCTS—VON DUPRIN SELF-RELEASING FIRE EXIT DEVICES; VON DUPRIN AUTOMATIC DOOR HOLDER, LOCKING CASEMENT OPERATOR, WINDOW GUARDS, AND SECRET JEWEL SAFE

THE VON DUPRIN SELF-RELEASING FIRE EXIT LATCH—This device absolutely removes the cause of the great loss of life at fires occasioned by the exit doors refusing to operate at the crucial moment. It has the approval of the New York Board of Fire Underwriters and the Bureau of Buildings, City of New York, and has everywhere proved its worth. The following features will convince architects of the qualities claimed for this latch.

No instruction to operate it is necessary; a mere touch insures positive action.



SAFE EXIT IS A UNIVERSAL DEMAND

It possesses the usual features of all locking devices, the lock and the top and bottom latches. It is **powerful** and **heavy**, and therefore capable of withstanding the most severe handling, the operative members being machined and milled.

There are no exposed parts to mangle fingers or tear clothes. No springs are depended upon to release this device, but are attached merely to actuate the various members. Every spring may be removed, and yet the **slightest touch** on any part of the cross-bar will instantly and simultaneously release latches and locks and permit doors to open.

This bar stretches across the door on the inside about waist

high. It stands away from the wood and connects directly with the mechanism of the latch.

The operation of the Von Duprin Device under actual conditions of a panic is self-evident. The people rush blindly toward the exit doors and those at the head are forced against the operating bars that run across the doors; the latches operate *instantly and automatically* and the doors are thrown open to safety.

The usual hardware trim is applied on the outside of the door.

NOTE—These devices are not reversible. In ordering state whether to be applied on right- or left-hand door; also give width of door, width and thickness of stile and finish required.

VON DUPRIN SELF-RELEASING FIRE EXIT LATCH—No. 27 and 123—For double doors opening outward.

DETAILS OF NO. 27—There are top and bottom latches. No dead-locking or outside unlatching feature. Push-bar and latch on inside. Latch bolts may be dogged with special hook device. Outside of door has no hardware.

No. 27—Brass Metal

Finish 10	Polished
7 3/4	Antique Copper
9	Dull Brass
9 3/4	Antique Brass
07 3/4	Sand Blast Antique Copper
09 3/4	Sand Blast Antique Brass
06	Imitation Bower Barff

DETAILS OF NO. 123—Has 5-pin tumbler rim cylinder lock. Self-releasing mechanism and inside appearance similar to No. 27. Outside dead-locking and unlatching feature. Knob and escutcheon on outside, cast-brass, 3" x 12" plate, 3 cylinder keys.

Brass metal, Finishes same as for No. 27.

PRINCE PANIC BOLT—No. 30—For double doors opening outward.

DETAILS—Top and bottom bolts. No outside unlatching feature. Bolts dogged by automatic latch. Cross-bar will drive or release bolts. No hardware outside.

No. 30—Brass Metal Finishes same as for No. 27.



NO. 27—INSIDE ELEVATION

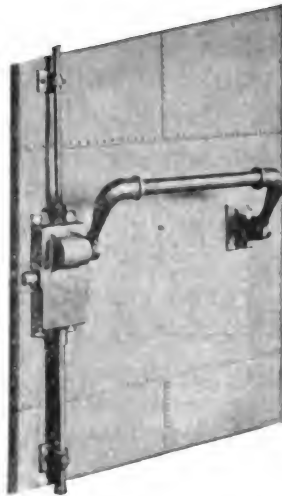


NO. 30—INSIDE ELEVATION

VON DUPRIN UNDERWRITERS' GRAVITY THREE-POINT LOCKING DEVICE—No. 34—Self-releasing feature. For metal fire escape doors, opening outward. In accordance with Fire Underwriters' requirements. Fire-retarding and life-safeguarding assured.

DETAILS—This device locks automatically. Doors open from inside by touch against cross-bar at any point. If the door is closed from the outside, the bars, after passing the tail piece at the bottom strike, engage themselves into the openings in the strikes, and lock the doors. Made in malleable iron only. In ordering state whether for tin-clad, calamine, or hollow-metal doors. Standard machine screws sent unless otherwise ordered.

No. 34—Malleable Iron
Finish J Plain
7¾ Antique Copper
9 Dull Brass
9¾ Antique Brass
07¾ Sand Blast Antique Copper
09¾ Sand Blast Antique Brass



NO. 34



NO. 33

PRINCE AUTOMATIC CREMORNE BOLT WITH PANIC RELEASE FEATURE—No. 33—Suitable for doors opening outward or inward. A moderate-priced device for use on the standing door of a pair of doors.

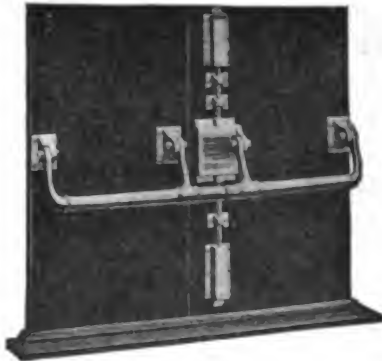
DETAILS—Bolts engage in same manner as in ordinary cremorne bolts, this action setting the push-plate in operative position. Top and bottom rods released simultaneously. Brass or bronze metal only. No hardware on outside. In ordering state whether doors open in or out, height of door between rabbets and finish required.

No. 33—Brass Metal
Finishes same as for No. 27.

VON DUPRIN DOUBLE-ARM SELF-RELEASING FIRE EXIT LATCH—No. 272—For double doors opening outward.

DETAILS—Top and bottom latches. No dead-locking or outside unlatching feature. No hardware outside. Push-bar with vertical latches on inside of door to open first. Cross-arm on other door connects on main cross-arm. Latches may be dogged with special hook dogging device.

No. 272—Brass Metal
Finishes same as for No. 27.

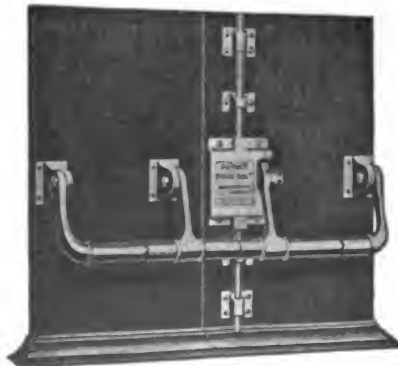


NO. 272—INSIDE ELEVATION

PRINCE DOUBLE-ARM PANIC BOLTS—No. 302—For double doors opening outward.

DETAILS—Top and bottom bolting feature. No outside deadlocking feature. No outside hardware. Push-bar with vertical bolts on inside of door to open first. Cross-arm on other. Automatic dogging feature. Cross-bar will drive or release bolts.

No. 302—Brass Metal
Finishes same as for No. 27.



NO. 302—INSIDE ELEVATION



REGULAR KNOB AND
ESCUTCHEON FOR
122

NO. 124—REGULAR
GRIP AND TRIM



INSIDE ELEVATION OF NOS.
124 AND 122

VON DUPRIN SELF-RELEASING FIRE EXIT LATCH—Nos. 124 and 122—Fitted with mortise cylinder lock for door opening outward and burglarproof-guarded front and strike.

DETAILS—Impossible to pick. No intricate lock parts. Horizontal or side latch. Outside dead-locking and unlatching feature. Furnished regularly with sectional grip and thumb piece outside. Latch operated from outside in same manner as ordinary thumb latch or lock. Bolt will unlatch from inside even though dead-locked from outside. Latch bolts may be dogged by key.

Nos. 124 and 122—Brass Metal
Finishes same as for No. 27.

VON DUPRIN SELF-RELEASING FIRE EXIT LATCH—No. 125—With rim cylinder lock. For single door opening outward.

DETAILS—Outside dead-locking and unlatching feature. Knob and escutcheon on outside of door. Latch operated from outside. Latch bolt unlatched from inside even though dead-locked from outside. Latch bolt may be dogged by special hook dogging device. 2½" x 8" cast-brass escutcheon and cast-brass knob, 3 cylinder keys, 5-pin tumbler lock.

No. 125—Brass Metal
Finishes same as for No. 27.



NO. 125—INSIDE ELEVATION

VON DUPRIN SELF-RELEASING FIRE EXIT LATCH—No. 126—For schoolhouse class-room doors to corridor.

DETAILS—Sectional grip and thumb latch on outside. Push-bar and latch on inside.

No. 126—Brass Metal
Finishes same as for No. 27.



NO. 126—INSIDE ELEVATION

VON DUPRIN SELF-RELEASING FIRE EXIT LATCH—No. 28—With rim device for single door opening outward. Inside appearance similar to No. 125.

DETAILS—No dead-locking or outside unlatching feature. No outside hardware. Pushbar and latch on inside. Latch bolt may be dogged by special dogging device.

No. 28—Brass Metal
Finishes same as for No. 27.

VON DUPRIN SELF-RELEASING FIRE EXIT LATCH—No. 29—Mortise device for single door opening outward. Inside appearance similar to No. 126.

DETAILS—No dead-locking or outside unlatching feature. No outside hardware. Push-bar and latch on inside.

No. 29—Brass Metal
Finishes same as for No. 27.

"Automatic" Sprinkler Co. of America

Executive Offices
UNDERWRITERS' BUILDING, 123-133 WILLIAM STREET
NEW YORK, N. Y.

Department Offices

AKRON, OHIO
ATLANTA, GA.
BALTIMORE, MD.
BOSTON, MASS.
BUFFALO, N. Y.
CHARLOTTE, N. C.

CHICAGO, ILL.
CINCINNATI, OHIO
DALLAS, TEXAS
DES MOINES, IOWA
DETROIT, MICH.
KANSAS CITY, MO.

MINNEAPOLIS, MINN.
NEW HAVEN, CONN.
NEW ORLEANS, LA.
PHILADELPHIA, PA.
PORTLAND, ORE.
SAN FRANCISCO, CAL.

SCRANTON, PA.
SEATTLE, WASH.
ST. LOUIS, MO.
SYRACUSE, N. Y.
VICKSBURG, MISS.

PRODUCTS—COMPLETE AUTOMATIC SPRINKLER SYSTEMS AND SPRINKLER APPLIANCES

STANDARD—We manufacture and install, complete, only Sprinkler Systems and Appliances that are approved by all Insurance Boards.

This is our business exclusively, and we are **Specialists** in the line of Fire Protection.

Do not intrust Sprinkler installations to those without experience in this line, or who do not erect their own appliances.

DESCRIPTION—An Automatic Sprinkler Head consists of bronze frame, threaded for attachment to fittings, containing a water outlet and, opposite thereto, a deflector to distribute the water. Water is brought to the Sprinkler Heads through a system of piping attached close to the ceiling; and Heads are spaced, each to cover, about 8 x 10 ft., and so protect every portion of building interior.

Efficient and properly installed sprinkler systems have demonstrated the possible saving of over 95% of the annual fire loss in this country, an item of over 1500 lives and \$230,000,000. In more than 11,000 fires reported where there were sprinklers on the premises, there was a loss of only 4.9%, and this was due mainly to preventable causes. The following describe the two systems used:

WET SYSTEM—This is used in buildings where there is no danger of freezing. In such installations the pipes are filled with water at all times.

DRY SYSTEM—In buildings, the interiors of which are wholly or in part exposed to the weather, in which a temperature below freezing prevails, the pipes cannot be filled with water. The water supply is accordingly intercepted by a controlling valve, known as an Automatic Dry Valve, at a point where temperature is above freezing. In event of conflagration, the releasing of compressed air in the pipes, between the Sprinkler Heads and the Dry Valve, automatically admits water to the system.

ADVANTAGES—Automatic Sprinklers operate only when needed. They open only by heat from the fire and act, therefore, only where the fire is located. They sound an alarm and immediately operate to extinguish the fire. Smoke and heat do not impede their operation as they do that of firemen. Automatic Sprinklers are equally effective in places beyond the reach of other fire-fighting appliances. Sprinklers safeguard the stock contained in a fireproof building and help to make the structure deathproof. They pay for themselves, in reduction of insurance premiums, in less than four years, by actual average.

ESSENTIALS OF AN EFFICIENT AUTOMATIC SPRINKLER SYSTEM—An efficient and independent Water Supply with ample pressure to reach all points. A properly designed piping system. Reliable Sprinkler Heads, valves and other automatic appliances. And all properly installed by those only who are experienced in the art.

ESTIMATES, INFORMATION—Our executive offices or any of our department offices will furnish engineering services and information, estimates and specifications, without cost, pertaining to Automatic Sprinkler Installations.



"International"



"Manufacturers"



"Niagara"

TYPES OF SPRINKLER HEADS, ACTUAL SIZE, MANUFACTURED AND INSTALLED. THESE ARE APPROVED BY ALL INSURANCE BOARDS

"A.E.C." SYSTEMS

Anti-Slip Metal Tread Co.

Safety Treads

ELECTRICAL CONVEYING MACHINERY CO., MANUFACTURERS

120 LIBERTY STREET
NEW YORK, N. Y.

PRODUCTS—ANTI-SLIP METAL STAIR TREADS AND FLOORING

DESCRIPTION—Tread material is composed of a granular abrasive material molded on the face of a strong steel base plate by a soft metal binder cast in the voids between the grains of the abrasive. The process of securing this mixture to the steel base plate is so perfect that it can only be broken by a sledge hammer and cold chisel.

The abrasive grains carry the footwear, and the soft metal binder wears down and recedes below the projecting points of the grains.

The non-slip quality is constant throughout the life of the tread, because the tread material is the same throughout its entire thickness.

BINDER—The soft metal binder is composed of hard lead, taking advantage of the well-known property it possesses of being non-adhesive for ice and snow. The bottom of the steel base plate is also coated with lead, to prevent rust. This tread may be laid on marble, iron, steel, wood, or concrete stairways.

TESTS—Competitive tests with other Safety Treads under the most severe traffic conditions, by some of the largest users of treads in New York, have proven the superior constant non-slip-ping and wearing qualities of Anti-slip Metal Tread.

ADVANTAGES—*Anti-slip Metal Tread allows no steel to come in contact with the foot.* Other treads do. Steel soon becomes slippery—particularly when wet. The carrying of the footwear entirely on the granular abrasive accounts for the surprising efficiency of Anti-slip Metal Tread under all conditions of weather as compared with other metal treads under similar conditions.

ESTIMATES—Estimates and additional information will be furnished on application.

A TYPICAL INSTALLATION—The adjoining cut shows the center stairway leading up from the East side of Park Row, New York, to Brooklyn Bridge. It was taken by flashlight after midnight on Feb. 23d, 1912, during the momentary lull in the incessant all-day and night traffic. This stairway is equipped with Anti-slip Metal Tread with reinforced nosing, and is probably the busiest stairway in the United States.

The stairway just North of the one pictured is also similarly equipped.

"A.B.C." SYSTEMS

OTHER REFERENCES—Anti-slip Metal Tread has also been furnished to the Interborough subway; Pennsylvania R. R.; D., L. & W. R. R.; New York Central R. R.; Brooklyn Rapid Transit Co.; United States Navy, etc.



FULL-SIZE CROSS SECTION
FLAT TYPE, DESIGNED FOR PASSAGeways AND RAMPS

Suitable where a large area is to be covered, and for hospitals and other places where ease of cleaning is of great importance



FULL-SIZE CROSS SECTION
CORRUGATED TYPE FOR GENERAL SERVICE



FULL-SIZE CROSS SECTION
REINFORCED NOSING ON CORRUGATED TYPE
For extraordinarily heavy service



STAIRWAY AT PARK ROW, NEW YORK, TO BROOKLYN BRIDGE

SECTION 18

Builders' Iron Work and Structural Hardware

(Door and Window Hardware see Section 19)

(Structural Steel and Iron see Section 14)

(Architectural and Ornamental Iron see Section 15)

Section Synopsis

Nails, Spikes, Screws; Bolts, common, anchor, expansion, toggle; Chain; Beam Anchors, Bridle Irons, Hangers, Boxes; Post Caps and Bases; Truss Irons; Chimney Bars; Fireplace

**Throats; Brick Handlers; Wall, Stone and Terra Cotta Anchors;
Wall Ties, or Brick Bonds; Wall Plugs; Flue Doors; Soot Doors;
Cellar Window Chutes, etc.**

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX

REGULAR CLASSIFICATION

1	Anchora, beam, wall, stone, terra cotta
2	Beam hangers, wood joists and girders
3	Bolts, anchor, expansion, toggle, etc.
4	Brick handlers
5	Bridle irons, chimney bars, beam straps, special forgings
6	Cellar window chutes
7	Chain
8	Fireplace throats, and dampers
9	Iron plinths, wood porch columns
10	Nails, spikes, screws, etc.
11	Post caps and bases
12	Soot doors, ash-flue doors, air gratings, etc.
13	Truss irons, shoes, plates, rods, bolts, stirrups, etc.
14	Wall ties, plugs, etc.

SPECIAL CLASSIFICATION

Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.

25	Architectural iron work, general (S. 15 A)
26	Coal-hole, manhole and trap-pit frames and covers (S. 15 C)
27	Fire escapes, standard construction (S. 15 A)
28	Guy anchors (S. 3)
29	Iron ladders (S. 15 A)
30	Light structural steel and iron work of every kind (S. 15 A)
31	Plain iron railings, sidewalk lights, trap doors, gates (S. 15 A & E)
32	Plain stairs, straight, spiral (S. 15 A)
33	Stable fittings, mangers, racks, stall guards, etc. (S. 37)
34	Steel fire doors and shutters (S. 15 A)
35	Structural iron work, cast iron and steel frame (S. 14)
36	Window and door guards (S. 15 A & D)

TRADE NAMES AND BRANDS

"Goetz," beam hangers, Catalog 1
"Security," wall ties, S. 16 A, Catalog 5

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 6	7 to 12	13 to 18	19 to 24	25 to 49
1	Duvinage, Pierre. New York, N. Y.	1 2 3 5	11 12	13 14		25 26 27 28 29 30 31 32 33 34 35 36

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.

Cincinnati Mfg. Co.,
The
S. 15 A, Cat. 7
(Wall ties)

Colonial Fireplace Co.
S. 41, Cat. 3
(Fireplace throats and dampers, ash and soot doors)

Covert Co., The H. W.
S. 41, Cat. 1
(Fireplace throats and dampers, ash and soot doors, iron plinths for porch columns)

Follansbee Brothers Co.
S. 16 A, Cat. 5
(Wall ties)

Gardner & Co., R. H.
S. 19 A, Cat. 6
(Expansion bolts)

Hough Co., Wm. B..
S. 11, Cat. 3
(Wall ties and plugs)

Variety Mfg. Co.
S. 17 A, Cat. 3
(Rods, bolts, stirrups, etc.)

See also the Catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES.

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 6	7 to 12	13 to 18	19 to 24	25 to 49		1 to 6	7 to 12	13 to 18	19 to 24	25 to 48		1 to 6	7 to 12	13 to 18	19 to 24	25 to 48
American Foundry & Mfg. Co. St. Louis, Mo.		11				Godcharles Co., P. A. Milton, Pa.		10				Oliver Iron & Steel Co. Pittsburgh, Pa.	3 5				
American Metal Ceiling Co. Brooklyn, N. Y.			11			Graham Nut Co. Pittsburgh, Pa.	3 5		13			Over, Ewald. Indianapolis, Ind.	6	12			
American Screw Co. Providence, R. I.		10				Hall's Sons, Samuel. New York, N. Y.	3		13			Philadelphia Expansion Bolt Co. Philadelphia, Pa.	3				
American Steel & Wire Co. Chicago, Ill.		10				Haakell Mfg. Co., Wm. H. Pawtucket, R. I.	3					Pidgeon-Thomas Iron Co. Memphis, Tenn.			14		
Ames & Co., W. Jersey City, N. J.	3	10				Hastings Foundry & Iron Works Hastings, Neb.	6					Pittsburgh Rivet Co. Pittsburgh, Pa.	1 3 5				
Atlantic Steel Co. Atlanta, Ga.		10			30	Hirsch Rolling Mill Co. St. Louis, Mo.	1 2 5	7 10	13 14		28 29 30 31 32	Portland Stove Foundry Co. Portland, Me.		8 12			
Atlas Car Mfg. Co. Cleveland, Ohio	1				28 29 30	Hutchins Car Roofing Co. Detroit, Mich.			14			Pottsville Bolt Co. Pottsville, Pa.	1 3		13		
						Ideal Hanger Co. Cleveland, Ohio	2	11				Prescott & Son, J. B. Webster, Mass.	1		14		
						Igoe Bros. Brooklyn, N. Y.	5	10	14		27	Reed & Prince Mfg. Co. Worcester, Mass.		10	13		
						Indiana Foundry Co., Ltd. Indiana, Pa.	1	11 12	14			Ritter Co., Emil W. Chicago, Ill.	6	11 12	13		
Berry Bros. Columbus, Ohio	3	10				Judson Mfg. Co. San Francisco, Cal.	1 3 5 6	12	13		29 30 36	Robertson Steel & Iron Co. Cincinnati, Ohio			14		
Brohard Co. Philadelphia, Pa.	3					Kansas City Bolt & Nut Co. Kansas City, Mo.	1 2 3 5		13		28	Rockford Bolt Co. Rockford, Ill.	1 2 3 5	10 11 12	13		28 29 30 31 32
Brown Bros. Mfg. Co. Chicago, Ill.			14		27 29 32 36	Kirk-Latty Mfg. Co. Cleveland, Ohio	3					Scovil Iron & Steel Co. Jersey City, N. J.	1 3 5	11 12	13		29 30 32 36
Chicago Nut Co. Chicago, Ill.	3					Kramer Bros. Foundry Co. Dayton, Ohio		11 12				Scranton Bolt & Nut Co. Scranton, Pa.			13		
Church Appliance Mfg. Co. La Salle, Ill.	1 2 3 5 6	8 11 12	13 14		27 29 30 31 32 36	Lake Erie Iron Co. Cleveland, Ohio	3					Seaman, A. C. Philadelphia, Pa.	3				
Church, Isaac South Norwalk, Conn.	3					Leffert Galvanizing Works New York, N. Y.		10				Sessions Foundry Co. Bristol, Conn.	1 2 3 6	7 8 10 11 12	13 14		
Cinch Expansion Bolt & Eng. Co. New York, N. Y.	3					Loetscher-Ryan Mfg. Co. Dubuque, Iowa		12				Star Expansion Bolt Co. New York, N. Y.	1 3				
Conlan Electric Co. New York, N. Y.	3					McDowell & Co., J. G. Pittsburgh, Pa.	4		14			St. Louis Screw Co. St. Louis, Mo.	1		13		
Crane & Co. Chicago, Ill.	3				31	Merwin Mfg. Co. Erie, Pa.			14			Swett Iron Works, A. L. Medina, N. Y.	6	11 12			29 36
Davis Bros. Philadelphia, Pa.		10				Michigan Bolt & Nut Works Detroit, Mich.	1 3 5				28	Syracuse Corner Block Fac- tory Syracuse, N. Y.		11			
Diamond Expansion Bolt Co. New York, N. Y.	3					Monarch Mfg. Co. Grand Rapids, Mich.	1 6	11	14		30	Van Alen & Co. Northumberland, Pa.		10			
Dowman-Doxier Mfg. Co. Atlanta, Ga.	5		14		27	Moran Bolt & Nut Mfg. Co. St. Louis, Mo.	1 3 5	10 12	13		28 30	Van Dorn Iron Works Co. Cleveland, Ohio	2	11			
Duplex Hanger Co. Cleveland, Ohio	2	11				Mustberger Iron Co. Buffalo, N. Y.	4 5	12				Vandegrift & Morris Shelbyville, Ind.	3	10	13		
Evans, F. H. Brooklyn, N. Y.	3					National Bolt Works Philadelphia, Pa.	1 3 5	11	13			Worcester Machine Screw Co. Worcester, Mass.		10			
Glauber & Co., M. New York, N. Y.	3	7				New England Bolt & Steel Co. Everett, Mass.	1 2 3 5		13		27 29 30 31 32						

Pierre Duvinage

Builders' Iron Work

And Structural and Architectural Work in Iron and Steel

253 BROADWAY
 NEW YORK, N. Y.

PRODUCTS—Builders' Iron Work: POST CAPS, WALL PLATES, PIER PLATES AND BRACKETS, ROOF TRUSS CASTINGS AND RODS, SPECIAL CASTINGS, BRIDLE IRONS, GOETZ BEAM HANGERS, BEAM AND WALL ANCHORS of every Kind

WHEEL GUARDS, SADDLES, SILLS, SHUTTER EYES, CAST-IRON CLEANOUT DOORS, TRAP-PIT COVERS

WINDOW GUARDS, AREA GRATINGS, WIRE GUARDS for Windows and Doors, SHEET STEEL SHUTTERS AND DOORS

Architectural Iron Work: CAST-IRON AND STEEL STAIRS, CIRCULAR STAIRS, ELEVATOR FRONTS, BAY-WINDOW AND SHOW-WINDOW WORK; WROUGHT-IRON FIRE ESCAPES, BALCONIES, RAILINGS, FENCES, PIPE RAILING, ORNAMENTAL IRON WORK

Structural Steel and Iron: CAST-IRON COLUMNS, BASES AND PLATES; STEEL FRAMING OF BEAMS, CHANNELS, ANGLES, COLUMNS, GIRDERS, TRUSSES

All other kinds: OF IRON AND STEEL WORK required for Buildings

DUVINAGE SYSTEM OF BUILDING ANCHORING—The post caps, wall plates, brackets and sill plates employed are so designed that the beams, girders and posts are rendered self-releasing. In case of a fire, the beams, burning through, *release themselves* and fall, leaving the walls standing. The heat and fire are thus confined *within* a building, and the spread of the fire to adjoining premises is prevented or, at least, greatly retarded.

Insurance Companies show their approval of this construction by allowing reduced rates wherever it is employed.

DETAILS—This system consists of the following individual features:

Duvinage Post Caps—Bifurcated, triple, quadruple, etc., calculated for loads from 75 lbs. to 500 lbs. per square foot and varying lengths of span.

PRICE LIST OF "DUVINAGE" POST CAPS

Size of Post	Roof	¾"	1"	1¼"	1½"
6 inch squares	\$0.70	\$1.00			
8 " "	1.45	3.00			
9 " "	1.65	3.40			
10 " "	1.90	3.65			
11 " "	2.00		\$4.00	5.40	6.00
12 " "	2.15		5.00	5.55	6.50
13 " "			5.50	6.00	7.00
14 " "			6.00	7.00	8.00
15 " "			7.25	8.25	9.25
16 " "			8.00	9.25	10.25
17 " "			8.75	11.00	11.75
18 " "			9.10	12.00	12.40

The Duvinage Wall Plate—An anchor-and bearing-block combined. No blue stone or granite wall template required.

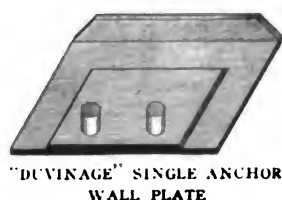
Saving in labor and gain in strength result from the projecting hubs which engage in holes bored in the beam. This prevents the shearing off of the anchor-part of the beam, so liable to occur with the usual style plates with projecting ribs which require the cutting of a notch across the timber.

Double anchor-plates made for party or fire walls.

PRICE LIST OF "DUVINAGE" SINGLE-ANCHOR WALL PLATES

Cast-Iron	Beams	9 in. deep	13 in. deep
4 in. wide		\$0.25	
5 " "		.35	
6 " "		.55	
8 " "		.65	and \$0.75
9 " "		.75	.90
10 " "		.85	1.15
12 " "		1.15	1.35
14 " "		1.30	1.65
16 " "		1.50	2.00
18 " "		1.70	2.15

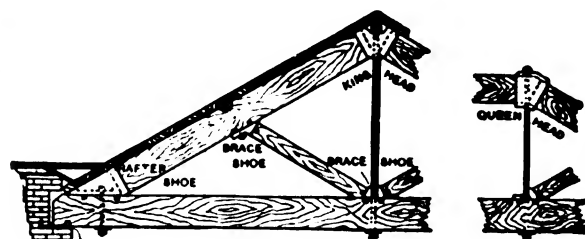
TIMBER ROOF TRUSS CASTINGS—Made to any required dimensions. So designed that the ends of timbers are cut square, saving the cost of mortising. Anchor plates and shoes, brace



"DUVINAGE" SINGLE ANCHOR WALL PLATE



STEEL CONSTRUCTION



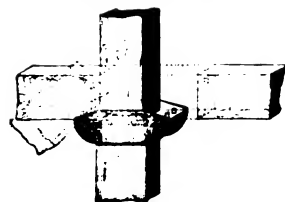
"DUVINAGE" ROOF TRUSS FITTINGS

shoes, king heads, queen heads; special irons as required. Truss rods, bolts and washers supplied for any required pitch.

BRIDLE IRONS—(New York Building Code)—A large stock of wrought-iron beam hangers always on hand and special sizes made to order.

ANCHORS—Every description of New York Building Code Anchor and Strap, of wrought-iron, regular or special sizes, plain or galvanized.

OUR STANDARD SPIRAL STAIRS—All-iron throughout, strong, fireproof, of neat design. Made 42, 48, 56, 60 and 72 inches diameter. Prices on application.



"DUVINAGE" POST CAPS FOR SELF-RELEASING BEAMS



STANDARD SPIRAL STAIRS

CLASSIFICATION PAGE OF
SECTION 19

Builders' General Hardware
(Builders' Iron Work, Nails, Spikes, etc. see Section 18)

Section Synopsis

A. STANDARD AND SPECIAL HARDWARE of all descriptions, for hanging and securing doors, windows, blinds, separate sash, etc., i.e., Locks, Butts, Hinges, Spring Hinges, Standard and Overhead Sash Pulleys, Holdfasts, Transom Openers, Door Holders, Door Checks; Sash Chain, Steel Ribbon, Cord

Shutter Fixtures, Casement Hardware; Drawer, Cabinet and Furniture Hardware; Sliding-Door Hangers, Swivel Hangers, Gear Sash Operators, Balance Door Fixtures, Revolving Window

Fixtures; Fire-Door Hangers and Hardware; Store-Fixture and Ice-Box Hardware, etc.

B. Mechanics' Tools; Emery Grinders

C. SUNDRIES. Ash, Cotton-Waste and Garbage Receptacles; Automatic Door and Gate Openers; House and Garden Tools; Tree Sprays; Window Sash Ventilators; Window Box Ventilators, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX		REGULAR CLASSIFICATION	
A	1	Balance door fixtures	
	2	Door checks, <i>pneumatic, liquid, cable</i>	
	3	Door holders, <i>bottoms</i>	
	4	Drawer, cabinet, furniture and drapery hardware	
	5	Dumbwaiter rope, clothes line, etc.	
	6	Fire-door hangers and hardware	
	7	Gear sash operators	
	8	Glass knobs, escutcheons, push plates	
	9	Sash, casement, shutter and fan-light centers and fixtures, <i>special revolving, adjusting, etc.</i>	
	10	Sash balances	
	11	Sash chain	
	12	Sash cord, signal cord	
	13	Sash pulleys, <i>special design, overhead, etc.</i>	
	14	Sash ribbon, <i>steel</i>	
	15	Sash weights:—	
	16	Iron	
	17	Lead	
	18	Sliding and swivel-action door-hangers	
	19	Sliding door tracks	
	20	Spring hinges, <i>special kinds</i>	
	21	Standard hardware for hanging and securing doors, windows, shutters, blinds, etc.	
	22	Store fixture and ice-box hardware	
	23	Transom openers, <i>special design</i>	
B	41	Emery grinders	
	42	Mechanics' tools of all descriptions	

C		SPECIAL CLASSIFICATION	
C	46	Cans or receptacles, ash, cotton-waste, garbage	
	47	Car ventilators	
	48	Door openers (serving), automatic	
	49	Gate openers (wagon, etc.), automatic	
	50	House and garden tools	
	51	Transom ventilators	
	52	Tree sprays, <i>antiseptic</i>	
	53	Wall box ventilators	
	54	Window box ventilators	
	55	Window sash ventilators	
	61	Brick bonds, wall plugs, etc. (S. 18)	
	62	Corner beads, <i>plastering</i> (S. 12 A)	
	63	Engine valves (S. 23 B)	
	64	Metal weatherstrips (S. 21 F)	
	65	Standards, metal, for lavatories, marble and slate plumbing, partitions (S. 35 B)	
	66	Ventilating systems, electric fans, and blowers (S. 29 A)	

TRADE NAMES AND BRANDS	
"Duplex," transom operator	Catalog A 5
"Empire," sash operator	
"Eureka," sash operator	
"Ideal," sash operator	
"Monarch," sash operator	
"Peerless," sash operator	
"Pilot," sash operator	
"Pneumatic," sash operator	
"Reliance," sash operator	
"Standard," sash operator	
"Triumph," sash operator	
"Twin," sash operator	S. 15 B. Catalog 1
"Victor," sash operator	
"Hercules," sash operating device	

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 15	16 to 30	31 to 45	46 to 60	61 to 75
A 5	Dearborn Hardware Mfg. Co. Chicago, Ill.	7 9	22			
A 6	Gardner & Co., R. H. Chicago, Ill.	2 3	23			65
A 4	Michigan Engine Valve Co. Detroit, Mich.	9		41		63 64
A 3	McCrum - Howell Co., The New York, N. Y.	9	22			
C 1	Packer, Alfred A. Chicago, Ill.				47 51 53 54	66
A 2	Puritan Cordage Mills Louisville, Ky.	5 12				
A 1	Samson Cordage Works Boston, Mass.	5 12				

SPECIAL REFERENCE List of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 15	16 to 30	31 to 45	46 to 60	61 to 75		1 to 15	16 to 30	31 to 45	46 to 60	61 to 75		1 to 15	16 to 30	31 to 45	46 to 60	61 to 75
Douglas, W. & B. S. 35 F, Cat. 2 (Tree sprayers)						Bardsley Mfg. Co., Joseph A. New York, N. Y.	2 3	19				Chicago Hardware Co. No. Chicago, Ill.	8	20			
Keepsdry Construction Co. S. 15 B, Cat. 1 (Sash operating devices)						Barrows Lock Co. Lockport, Ill.	4 8 9	20 21				Chicago Spring Butt Co. Chicago, Ill.		19			
National Lead Company S 35 A, Cat. 1 (Lead sash weights)						Bommer Bros. Brooklyn, N. Y.	3	19 20				Clark & Bros., Hugh Elmer... Rochester, N. Y.	3 7 9				
Orr & Lockett Hardware Co. S. 32 A, Cat. 1 (General builders hardware)						Boston Pressed Metal Co. Worcester, Mass.	9	22				Climax Lock & Ventilator Co. Buffalo, N. Y.	4 8	20		55	
Vonnegut Hardware Co. S. 17 B, Cat. 1 (Door holders, case- ment fixtures, etc.)						Bradshaw, C. E. Cleveland, Ohio	10	20				Coburn Trolley Track Mfg Co. Holyoke, Mass.	6	17 18 20			
						Brainerd Mfg. Co. East Rochester, N. Y.	3 4 8 9	21				Columbian Hardware Co. Cleveland, Ohio	4	20			
						Brass Goods Mfg. Co. Brooklyn, N. Y.	4 8	21				Conroy, Francis V. Philadelphia, Pa.		21			
						Bridgeport Chain Co. Bridgeport, Conn.	11					Conroy Mfg. Co. Northeast, Md.		21			
						Bridgeport Hardware Mfg Corp. Bridgeport, Conn.	17 18	42 48				Corbin Cabinet Lock Co. New Britain, Conn.	4	20			
Acme Specialty Co. New York, N. Y.		20				Brunner & Co. New York, N. Y.	4					Corbin, P. & F. New Britain, Conn.	2 3 4 6 8 9	18 19 20 21 22			
Albany Hardware & Specialty Mfg. Co. Albany, Wis.		20				Builders Hardware Mfg Co. Paterson, N. J.	9	20					Dayton Keyless Lock, Co. Dayton, Ohio		20		
Allith-Prouty Co. Danville, Ill.		19 20				Bullard & Gormley Co. Chicago, Ill.	2 3 4 6 8 10 11 12 13 14	17 18 19 20 21 22	42	46 50		Devlin Mfg. Co., Thos. Philadelphia, Pa.	7 9	22			
American Foundry & Machine Co. St. Louis, Mo.		13				Burgess-Norton Mfg Co. Geneva, Ill.		20	42			Dix Mfg. Co. Baltimore, Md.		18			
American Foundry & Mfg Co. Frederick, Md.		20				Caldwell Mfg. Co. Rochester, N. Y.	2 3 9 10 14			55		Drue, Co., G. Bridgeport, Conn.	7				
American Lawn Tool Co. Canton, Ohio				50		Casement Hardware Co. Chicago, Ill.	9	20				Durkee & Co., C. D. New York, N. Y.	8 13				
American Pulley Co. Philadelphia, Pa.		18				Cassady Fairbanks Mfg Co. Chicago, Ill.			42			Eagle Lock Co. Terryville, Conn.	4				
Arcade Mfg. Co. Freeport, Ill.		19	21			Central City Bolt Co. Saratoga, N. Y.		17 18				Economy Ventilator Co. New York, N. Y.				54 55	
Arrow Can Co. New York, N. Y.				40		Chapman Safety Lock Co. Geneva, Ohio	1 4 8 9 11	19 20				Fitch Co., W. & E. T. New Haven, Conn.		20			
Artistic Bronze Co. Bridgeport, Conn.		4 8															
Atlantic Co. Brooklyn, N. Y.		11	20														
Austin & Eddy Boston, Mass.		11 12 14															
Austral Window Co. New York, N. Y.																	
Automatic Sash Holder Co. New York, N. Y.																	

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 15	16 to 30	31 to 45	46 to 60	61 to 75		1 to 15	16 to 30	31 to 45	46 to 60	61 to 75		1 to 15	16 to 30	31 to 45	46 to 60	61 to 75
Forg, P..... Somerville, Mass.	4					Ives Co., H. B..... New Haven, Conn.	4 9	20		55		Monarch Ventilator Co..... New York, N. Y.				54	
Foss, Benj. F..... Portland, Me.		20				Kees Mfg. Co., F. D..... Beatrice, Neb.		17 20				Moninger Co., John C..... Chicago, Ill.		20			
Gardner Sash Pulley Co..... Morris, Ill.	13 14					Lane Bros. Co..... Poughkeepsie, N. Y.	6	18 20				Morency-Van Buren Mfg. Co..... Sturgis, Mich.		20			
Gould-Mersereau Co..... New York, N. Y.	4					Larimer Mfg. Co..... Eola, Ill.	2					Moss Mfg. Co..... Baltimore, Md.	10 11 12 13				
Graham & Berwin..... New York, N. Y.	4 8					Lawrence Bros..... Sterling, Ill.		20				National Enameling & Stamping Co..... New York, N. Y.				46	
Grammes & Sons, L. F..... Allentown, Pa.		21				Lawson Mfg. Co..... Chicago, Ill.		19				National Lock Washer Co... Newark, N. J.	10	20			
Grand Rapids Hardware Co. Grand Rapids, Mich.	13					Leschen & Sons Rope Co., A St. Louis, Mo.	12					National Mfg. Co..... Sterling, Ill.	4	17 18 20			
Grey Iron Casting Co..... Mount Joy, Pa.	4	20				Lockwood Mfg. Co..... New York, N. Y.	2 4 8 9					National Supply & Mfg Co St. Louis, Mo.		17 18 20			
Griffin Mfg. Co..... Erie, Pa.	4	17 18 19 20				Louden Machinery Co..... Fairfield, Iowa	5	17 18				North Bros. Mfg. Co. Philadelphia, Pa.			42		
Hanson & Rhodes..... New York, N. Y.		20				Louver Ventilator..... Boston, Mass.				55		Northern Lock Co Traverse City, Mich.		20			
Hardware Supply Co Grand Rapids, Mich.	4					Luitink & Sons Mfg. Co Milwaukee, Wis.		18				Ormsby E. A..... Melrose, Mass.	7 13	22		55	
Harris & Reed Mfg. Co Chicago, Ill.	3 6	17				McKinney Mfg. Co... Pittsburgh, Pa.		17 18 20				Parker Wire Goods Co Worcester, Mass.	4 11	20			
Hatch, C. E. L..... Philadelphia, Pa.	3	20				Mallory Mfg. Co. Flemington, N. J.		20				Payson Mfg. Co Chicago, Ill.	4 9	18 19 20 21 22		55	
Helwig Mfg. Co..... St. Paul, Minn.			42			Marshall - Wells Hardware Co. Duluth, Minn.	1 2 3 4 6 7 8 9 10 11 14	17 18 19 20 21 22 23	42	48 49 51		Peck-Hamre Mfg. Co Berlin, Wis.		20			
Hendrickson, T. B. & H. S Philadelphia, Pa.	6					Martin, S. B..... Dalton, Ohio		20				Peck, Stow & Wilcox Co New York, N. Y.			42		
Hibbard, Spencer, Bartlett Co. Chicago, Ill.		20										Penn Hardware Co Reading, Pa.		20			
Hitchings & Co. Elizabeth, N. J.	9											Peters & Son, James Philadelphia, Pa.	5 7	20			
Huber Mfg. Co..... Astoria, L. I.		20										Phoenix Hardware Mfg. Co Haver, N. Y.	3 11		42		
Ideal Mfg. Co..... Erie, Pa.				55		Miller Keyless Lock Co., J. B Kent, Ohio		20				Prairie Mfg. Co Indianapolis, Ind.				50	
Indiana Tinware Co. Indianapolis, Ind.				46		Miller Lock Co..... Philadelphia, Pa.	4	20									
Introstyle & Novelty Co. Marietta, Ohio	3																

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 15	16 to 30	31 to 45	46 to 60	61 to 75		1 to 15	16 to 30	31 to 45	46 to 60	61 to 75		1 to 15	16 to 30	31 to 45	46 to 60	61 to 77
Pullman Consolidated Ventilator Co., York, Pa.				55		Shannon Hardware Co., J. B., Philadelphia, Pa.	2 3 4 6 8 9 10 11 12 13 14	17 18 20	42	46 50 55		Stephenson, C. H., Lynn, Mass.				46	
Pullman Mfg. Co., Rochester, N. Y.	2 10 14			55		Sharon Hardware Mfg. Co., Sharon, Pa.		17 18 20				Stover Mfg. Co., Freeport, Ill.	3 4	19 20		50	
Reading Hardware Co., Reading, Pa.	2 3 8	20 22				Shelby Spring Hinge Co., Shelby, Ohio	2 3 4 9	19 21				Streeter & Co., N. R., Rochester, N. Y.	10	20			
Reed Mfg. Co., Evan L., Sterling, Ill.		21				Silver Lake Co., Boston, Mass.	12					Strong, Carlisle & Hammond Co., Cleveland, Ohio			42		
Reflector & Hardware Specialty Mfg. Co., Chicago, Ill.	4 8 11 12 13	18 19 20 21				Simmons Hardware Co., St. Louis, Mo.	1 2 3 4 6 7 8 9 10 11 14	17 18 19 20 21 22 23	42	48 49 51		Swineford Co., G. A., Canton, Ohio		17 18			
Reliance Ball Bearing Door Hanger Co., New York, N. Y.	4 6	20				Slaymaker Lock Mfg. Corp., Lancaster, Pa.	4					Tabor Sash Fixture Co., Newark, N. J.	3 9	20 22			
Richards-Wilcox Mfg. Co., Aurora, Ill.	6	17 18				Sloan & Co., Frank B., Baltimore, Md.	13					Taylor & Boggis Foundry Co., Cleveland, Ohio	8	20			
Richey, Browne & Donald, Maspeth, N. Y.	6	17 18				Smith & Ekke Mfg. Co., Bridgeport, Conn.	11 13					U. S. Steel Lock Co., Lyons, Iowa		20		55	
Rixson, Oscar C., Chicago, Ill.	2 9					Smith Metal Window Hardware Co., Frank F., Newark, N. J.	9 11 13	20				United Window Balance Co., Baltimore, Md.	10				
Roof, W. S. & Son, Biloxi, Miss.	5	17 20				Soss Mfg. Co., Brooklyn, N. Y.		19 20				Victor Mfg. Co., Newburyport, Mass.	1 6	18 20			
Russell & Erwin Mfg. Co., New Britain, Conn.	2 3 4 6 8 9 11	18 19 20 21 22				Standard Lock Co., Brooklyn, N. Y.		20				Wagner Mfg. Co., Cedar Falls, Iowa	3 6	17 18 19			
Sabin Machine Co., Montpelier, Vt.		19				Standard Mfg. Co., Shelby, Ohio	4 8 9	19				Wiebusch & Hilger, Ltd., New York, N. Y.	11				
Sargent & Co., New York, N. Y.	2 3 4 6 8 9 13	19 20 21 22	42			Stanley Works, New Britain, Conn.	3 4 9	19 20 21				Williams Pivot Sash Co., Cleveland, Ohio	9	20 22			
Seidel Mfg. Co., St. Louis, Mo.	6 11 13 14	17 18 20				Stearns & Co., E. C., Syracuse, N. Y.	11 19	42				Wrightsville Hardware Co., Wrightsville, Pa.	13	20			
												Wright Wire Co., Worcester, Mass.	12				
												Yale & Towne Mfg. Co., New York, N. Y.	2 3 4 8 9	20 22			
												Zephyr Ventilator & Mfg. Co., Inc., Philadelphia, Pa.				55	
												Zimmerman & Co., C. F. S., Frederick, Md.	20				
												Zogg, Nicholas, New York, N. Y.	11				

Samson Cordage Works

Solid Braided Cord

88 BROAD STREET

BOSTON, MASS.

CHICAGO OFFICE
15 East Lake Street

NEW YORK OFFICE
155 Chambers Street

PRODUCTS—Manufacturers of SOLID BRAIDED CORD in all Sizes and Colors and for all Purposes, including SAMSON SPOT CORD and other SASH CORDS; VENTILATOR CORD; CURTAIN AND SHADE CORD; AWNING LINES; MASONS' LINES; CHALK LINES; DUMBWAITER ROPE; ARC LAMP AND TROLLEY CORD; SIGNAL CORD; CLOTHES LINE, ETC.

SAMSON CORD—All goods bearing the Trade Mark of Samson and the Lion are made of extra-quality stock, are carefully inspected and are warranted free from the rough braiding and finishing which destroy common cords so quickly.

SASH CORD—We manufacture three grades of Sash Cord, but the lower grades are made for competing trade in cheap work, and not to fill specifications for Samson Cord.

Examination of braided cord shows that the strands have freedom of play without slipping. The strain involved in running over pulleys is equally distributed over all the strands, while in twisted or hollow braided cord it is largely on the outside strands alone. Braided cord is also free from the internal stresses which so quickly destroy laid cord.



TRADE MARK

SPECIAL CORDS—Besides cotton cord, we carry Linen and Italian Hemp Cord in stock. We also make cords to order for any purpose, in special braid, finish or color.



SAMSON SPOT CORD

The spots on the cord and the words "Spot Cord!" are Trade Marks registered in the U. S. Patent Office

SAMSON SPOT CORD—Of the same quality and price as the plain white Samson Cord. The Spots on the cord serve as a means of identification after the label is removed. Spot Cord will wear many times longer than metal devices or than the common cords so often found on the market, made of inferior yarn, roughly braided and poorly finished, causing early destruction by abrasion on the pulley.

In explanation of the above we give the following interesting comparison of manufacture:

SAMSON SPOT SASH CORD	COMMON BRAIDED SASH CORD
YARN USED —High grade cotton, spun into fine yarn in our own mills.	YARN USED —Low grade, short staple, coarse yarn, necessarily uneven.
BRAIDING —This fine, even yarn admits of being braided into a smooth, cylindrical cord.	BRAIDING —Uneven tensions and rough braid, causing one strand to bear more strain than the others.
FINISHING —Starch finish, making smooth polished surface to prevent abrasion where the cord runs over the pulleys.	FINISHING —Starch finish, but where the surface is uneven it cannot be polished, therefore it wears out by abrasion.
INSPECTION —Every foot inspected, and any bad splicing, rough braiding or poor finishing thrown into waste.	INSPECTION —Cannot be inspected at the price this class of goods brings the trade. The rough cord due to the coarse yarn used cannot be remedied.

TESTS—Numerous tests on record show that Samson Spot Solid Braided Cord outwears metallic devices many times over. A copy of these tests will be sent free on application.

SAMSON SOLID BRAIDED ROPE—This rope should commend itself to Architects for Hoisting Work, Dumbwaiters, Invalid Lifts, Trunk Lifts, etc., where a first-class article is required. Inferior rope is liable to cause loss and personal injury.

SPECIFICATIONS—Architects who wish to protect themselves and their clients against substitution should specify, in full: "Samson Spot Sash Cord (Size from 6 to No. 12)."

Sash Cord Pulleys and Weights should be adapted to the service. The manufacturers recommend the following:

Size No.	Diameter of Cord	Weight per Dozen Hanks, About	Number of Feet per Pound, About	Heaviest Weight Recommended to be used on Cord	Smallest Pulley Recommended to be used with Cord
6	$\frac{3}{16}$ in.	18 lbs.	66 ft.	5 lbs.	1 $\frac{1}{4}$ in.
7	$\frac{7}{32}$ "	22 "	55 "	12 "	1 $\frac{3}{4}$ "
8	$\frac{1}{4}$ "	27 "	44 "	20 "	2 "
9	$\frac{9}{32}$ "	33 "	36 "	30 "	2 $\frac{1}{4}$ "
10	$\frac{5}{16}$ "	44 "	27 "	40 "	2 $\frac{1}{2}$ "
12	$\frac{3}{8}$ "	60 "	20 "	50 "	3 "

The number indicates the diameter in thirty-seconds of an inch. The price of Samson Spot Cord averages about one cent per foot.

SUNDRY PRODUCTS—We also call attention to our General Line of Cordage as enumerated in the Products Paragraph. Architects should specify our Samson Spot Solid Braided Clothes Line for pole lines and drying-frame equipment for apartment houses.

TERRITORY—Samson Spot Cord and our other goods are sold all over the world and are carried by practically all the Builders' Hardware Dealers in the United States.

Puritan Cordage Mills

Incorporated

Manufacturers of Cotton Sash Cord, Rope and Clothes Lines

LOUISVILLE, KY.



TRADE MARK



"REGAL" Sash Cord is always marked with TWO BLUE STRANDS

PRODUCTS—"REGAL" COTTON BRAIDED SASH CORD

"REGAL" CORD—We are the sole manufacturers of the cord of this name. Every hank of the product can be identified by the name "Regal" printed on the label, which is around every hank.

"Regal" Cord is further characterized and distinguishable from any other Sash Cord by having **two blue strands braided in the cord, which appear on the surface in the form of a broken spiral line.** This is done to enable the architect to distinguish "Regal" cord after the label has been removed and the cord has been put in the building.

Note. "Regal" Cord is the only sash cord that is marked with **two blue strands.**

The above are the *outward means* of identifying "Regal" Cord and distinguishing it from inferior goods on the market. It remains to describe the quality of material and careful manufacture upon which the high position of "Regal" Sash Cord is founded.

MATERIAL AND MANUFACTURE—"Regal" Sash Cord is made on the latest style improved braiding machinery. Nothing but the longest fiber white staple cotton is used in its manufacture. **This makes the cord as tough and durable as possible.** This cord is braided *firm*, but not *so stiff* that it will "kink" and wear over the pulleys. Sash Cord made of long-fiber cotton will outwear any chain or other metal devices. The quality of the cotton joined to the superior machine work produce a cord of **perfect finish.**

To further protect the product against even the remotest chance

"A.B.C." SYSTEMS

of a defect or blemish slipping in, every foot of it undergoes four separate inspections.

The result of all the above is to make "Regal" cord-hung windows work as if they were *ball-bearing* provided a well-made pulley is used. Every architect knows what an annoyance badly-acting windows are in a house. Avoid it by using "Regal" Sash Cord.

TEST—"Regal" Sash Cord has been put to a most severe test by the *U. S. A. Department of Commerce and Labor* and has been *thoroughly approved* for use on all government work. This is about the highest recommendation a sash cord can obtain, as government tests of this material are the most severe tests made.

"Regal" Sash Cord has stood the most severe tests of any sash cord manufactured and has clearly proven its ability to far *outwear the best metal sash chain* as well as any other leading brand of cord. We would like to have any architect interested *write for proofs of these statements*, which we can furnish by government tests and tests of other well-known parties.

"Regal" Cord is always marked with **Two Blue Strands**, and it is the only sash cord that is marked with **Two Blue Strands.** It is marked in this manner so as to distinguish it from all other markings of sash cord.

SAMPLES—We will be pleased to send samples to architects upon request; also, results of other tests proving its superiority over other cords.

The McCrum-Howell Co.

Manufacturers of **RICHMOND** Concealed Transom Lift, Casement Window and Outside Shutter Adjuster

General Offices

NEW YORK

Park Avenue and 41st Street

CHICAGO

Rush and Michigan Streets

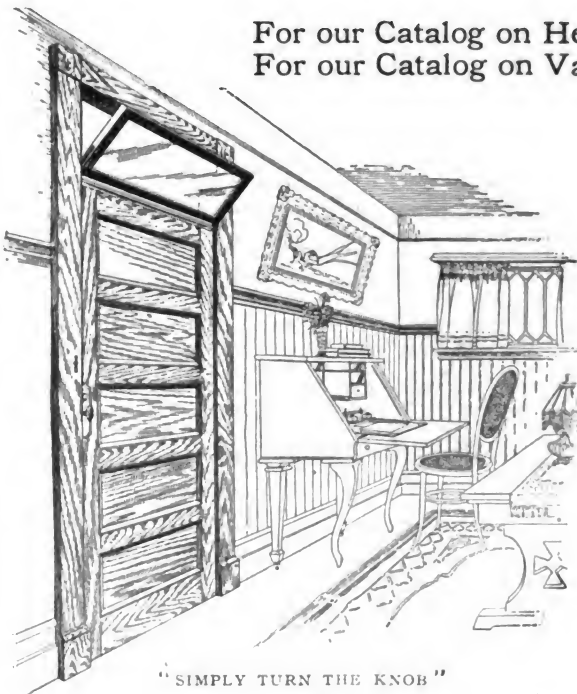
Branch Offices

BOSTON, MASS., 69-71 Federal St.
NEWARK, N. J., 43 Clinton St.
PHILADELPHIA, PA., 1108 Walnut St.
MONTREAL, CANADA, 15 Concord St.
SCRANTON, PA., 214 Wyoming Ave.
PITTSBURG, PA., 109 Jenkins Arcade

CLEVELAND, OHIO, Builders' Exchange
CINCINNATI, OHIO, 5th & Vine Sts.
ATLANTA, GA., 615 Forsyth Bldg.
DETROIT, MICH., 614 Moffatt Bldg.
INDIANAPOLIS, IND., 48 Monument Pl.
MILWAUKEE, WIS., St. Charles Hotel Bldg.

NEW ORLEANS, LA., 618 Audubon Bldg.
MINNEAPOLIS, MINN., 821 Palace Bldg.
OKLAHOMA CITY, OKLA., Majestic Bldg.
PORTLAND, ORE., 167 Seventh St.
SEATTLE, WASH., 621 Coleman Bldg.
LOS ANGELES, CAL., 347 Pacific Elec. Bldg.

For our Catalog on Heating Boilers and Radiators see Section 29B, Cat. 2
For our Catalog on Vacuum Cleaning see Section 38, Cat. 1



"SIMPLY TURN THE KNOB"

THE RICHMOND CONCEALED CASEMENT ADJUSTER—This newest addition to the **RICHMOND** family of modern improvements does for casement windows what the **RICHMOND** Concealed Transom Lift does for transoms.

Please observe the two T handles—one at the left and one at right, slightly above the center of the casing.

This is all of the **RICHMOND** Concealed Casement Window Opener that shows.

The ingenious mechanism hidden behind the casing under the sill is the remarkable and original thing about this new device.

A simple turn of these handles will always open the window without jamming and without sticking—it can never get out of order.

Wherever the window is left it is locked automatically and cannot be moved until the knob is again turned.

Ease and absolute certainty are assured.

The apparatus is simple, positive in action, slightly and convenient—exactly what has been wanted in Casement Adjusters for years.

We also furnish the **RICHMOND** Concealed Casement

THE RICHMOND CONCEALED TRANSOM LIFT—This fixture makes it possible for the first time to handle the transom problem in an artistic and mechanically satisfactory way.

It puts an end to the shaky push rods and other unsightly devices that have been associated with transoms since transoms were first invented.

It does more. It puts an end to transom lifts that stick, and ensures easy operation, not only when the work is new, but *always*.

OPERATION—The knob at the left operates the transom.

To open or close the transom, simply turn this knob. When the required angle is reached, let go; the transom stops, automatically locks, and cannot be moved until the knob is again turned.

The whole effect is harmonious, the practical result the most satisfactory transom lift. We also offer the **RICHMOND** Giant Concealed Transom Lift. This is a very powerful lift for heavy transoms such as are used over large windows, doors, entrances, etc.

Interesting descriptive matter will gladly be sent upon request.

PRICE LIST

The **RICHMOND** Concealed Transom Lift A and B style are made to operate standard size transoms to suit varying conditions.

For large transoms and special installations the Giant Pattern can be furnished to suit varying conditions.

Style C can be furnished to suit all conditions of Metal Trim.

Styles A and B, \$7.50 list.

Style C—Metal Trim—price on application.

Style D—Giant pattern—price on application.

Write for discounts.

The **RICHMOND** Concealed Casement Window Opener—price \$7.50, including T Handle.



THE **RICHMOND** CASEMENT ADJUSTER

Window Opener to operate single windows and sash pivoted in center of sill. In either of these cases but one T handle is required.

Full particulars upon request.

Michigan Engine Valve Co.

Manufacturers of Howarth Sash Centers

General Offices: 19-23 GILMAN STREET
DETROIT, MICH.

PRODUCTS—HOWARTH SASH CENTERS; ENGINE VALVES;
GOLDEN METAL WEATHERSTRIPS; PERFECTION EMERY GRINDERS

HOWARTH SASH CENTERS—We are the exclusive
manufacturers of various styles of **Howarth Sash Centers**.

In response to the demand of prominent Architects for an
improved sash center we began, over 10 years ago, to supply
the market with our high-grade **Friction Sash Centers**. These
are particularly suitable for use in factories, warehouses, office
buildings, school houses, etc.

NOS. 10 TO 012 SASH CENTERS

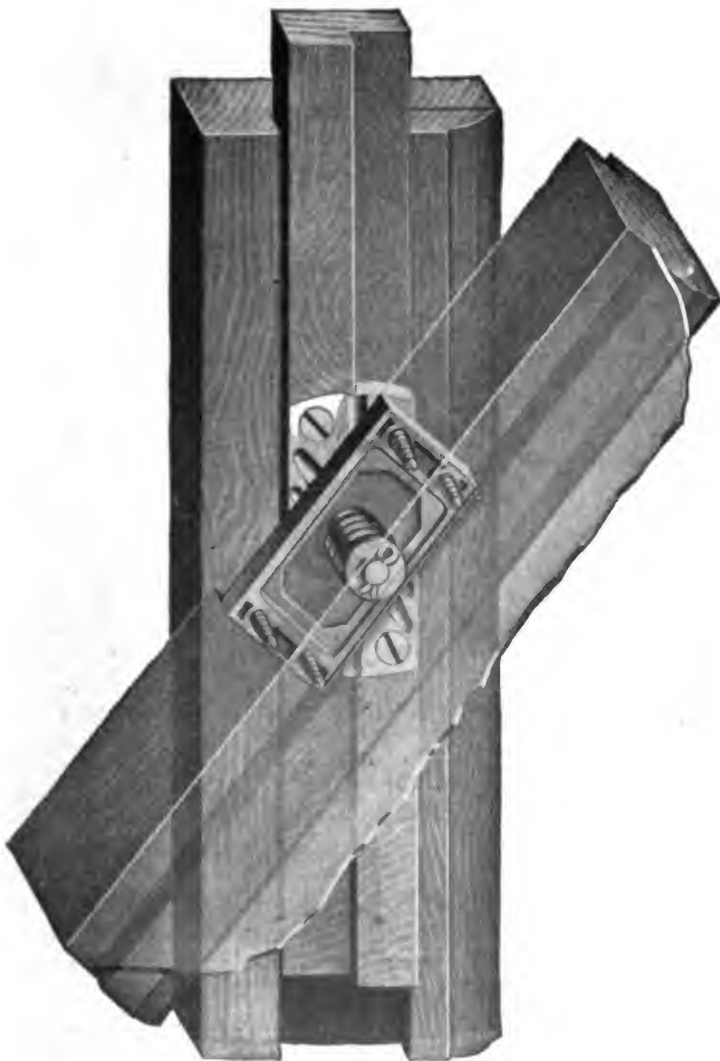
—For monitor and factory win-
dows, where sash are to be oper-
ated in batteries or with cords.
Made for $1\frac{3}{8}$ ", $1\frac{3}{4}$ " and $2\frac{1}{4}$ "
sash, in either Brass or Iron.
Sizes and Prices below:

Iron No. 10 for $1\frac{3}{8}$ " to $1\frac{3}{4}$ " sash.....	\$0.40
Iron No. 11 for $1\frac{3}{8}$ " to 2" sash.....	.50
Iron No. 12 for $2\frac{1}{4}$ " to 2" sash.....	.80
Brass No. 010 for $1\frac{3}{8}$ " to $1\frac{3}{4}$ " sash.....	1.70
Brass No. 011 for $1\frac{3}{8}$ " to 2" sash.....	2.60
Brass No. 012 for $2\frac{1}{4}$ " to 2" sash.....	4.40

All sash should be equipped
with centers at sash factory be-
fore installation. Catalogs sent
on request.



NOS. 10 TO 012 SASH CENTERS
PATENTED

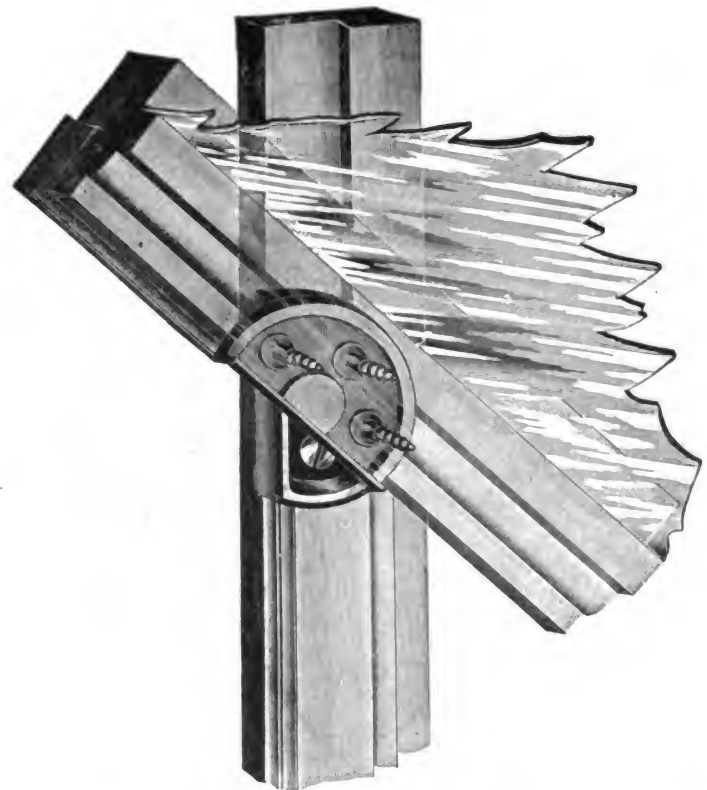


NOS. 300 TO 0306 FRICTION SASH CENTERS. PATD. OCT. 2, 1900

SIZES AND PRICES OF FRICTION CENTERS

IRON	BRASS
No. 300A for one $1\frac{1}{4}$ " sash.....	No. 0300A for one $1\frac{1}{4}$ " sash.....
No. 300 for one $1\frac{3}{8}$ " sash.....	No. 0300 for one $1\frac{3}{8}$ " sash.....
No. 301 for one $1\frac{3}{4}$ " sash.....	No. 0301 for one $1\frac{3}{4}$ " sash.....
No. 302 for one 2" sash.....	No. 0302 for one 2" sash.....
No. 303 for one $2\frac{1}{4}$ " sash.....	No. 0303 for one $2\frac{1}{4}$ " sash.....
No. 304 for one $2\frac{1}{2}$ " sash.....	No. 0304 for one $2\frac{1}{2}$ " sash.....
No. 305 for one $2\frac{3}{4}$ " sash.....	No. 0305 for one $2\frac{3}{4}$ " sash.....
No. 306 for one 3" sash.....	No. 0306 for one 3" sash.....

"A.B.C." SYSTEMS



NOS 97 TO 098 SASH CENTERS. PATD. SEPT. 5, 1899

NOS. 97 TO 098 SASH CENTERS—Adapted for outside
and inside transom sash. Strong and weatherproof. Tight
rabbeted joint excludes both weather and sound. Sizes and
Prices below:

Iron, No. 97, $1\frac{3}{8}$ " to $1\frac{3}{4}$ " sash.....	\$0.70	Brass, No. 097, $1\frac{3}{8}$ " to $1\frac{3}{4}$ " sash...\$1.40
Iron, No. 98, $1\frac{3}{8}$ " to $2\frac{1}{4}$ " sash.....	.90	Brass, No. 098, $1\frac{3}{8}$ " to $2\frac{1}{4}$ " sash... 1.60

Note—We make Iron or Brass Centers to match any desired
finish.

Dearborn Hardware Manufacturing Co.

Manufacturers of

Sash Operators, Transom Lifters and Casement Window Adjusters

2911-2919 CARROLL AVENUE

CHICAGO, ILL.

Telephone West 1493

PRODUCTS—A complete line of SASH OPERATORS, including PEERLESS, with horizontally-moving Shaft for continuous top-hinged Sash; PILOT, with tension Shaft; TRIUMPH, STANDARD, IDEAL, RELIANCE, VICTOR, TWIN, EMPIRE, PNEUMATIC, EUREKA, DUPLEX, MONARCH and SPECIAL OPERATORS. TRANSOM LIFTERS, SASH CENTERS AND CASEMENT-WINDOW ADJUSTERS in all Finishes

wheel, giving the shaft extra support at that point and allowing it to turn freely at all times.

This Operator will control a run of 125 feet in length of side-pivoted sash, and of top or bottom-hinged sash in proportion. *Holds and locks the sash in any position.*

Made in two sizes.

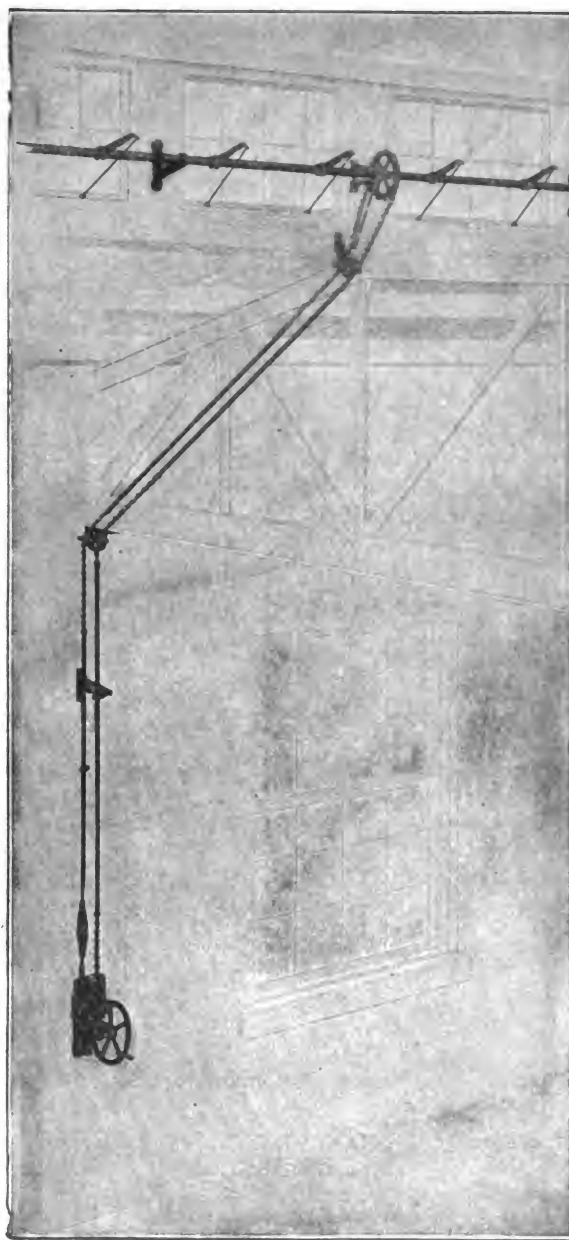
DESCRIPTION—We are the largest manufacturers of Sash Operators, and make a complete line.

Our Operators have been installed in many of the big Railroad Shops, Power Houses, Manufacturing Plants, Conservatories and Government Buildings throughout the country.

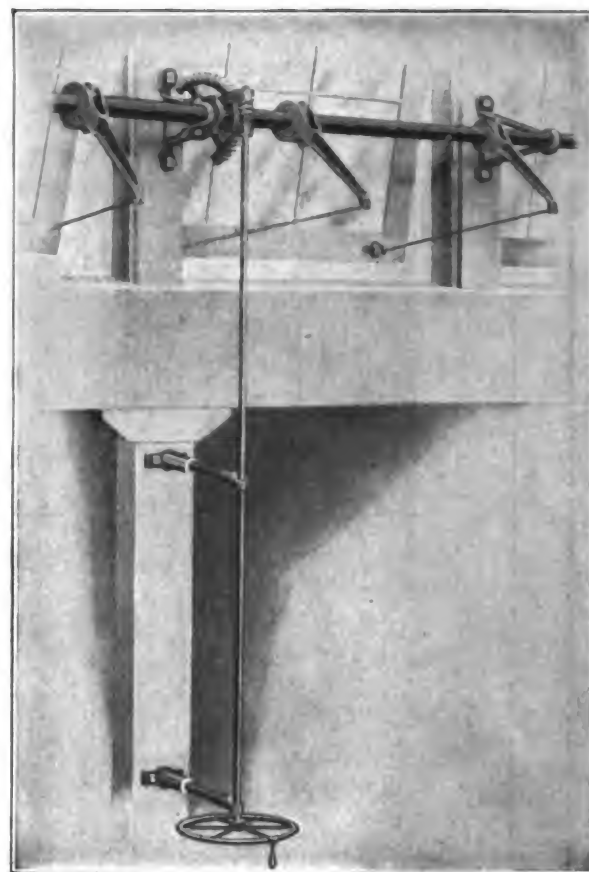
We make *Horizontal Moving-Tension Shaft and Pneumatic Sash Operators* for all usual cases to which they are adapted, but also make *Special Designs Apparatus* to order.

All orders are executed with the utmost accuracy and shipped with dispatch. Send us the plans and specifications, and estimates of cost will be forwarded by return mail. *We solve every sash problem presented to us.* All our work is fully guaranteed.

TRIUMPH ROLLER-BEARING SASH OPERATOR—STYLE T.—The Triumph Operator has a worm and gear; it is a very powerful apparatus and easy to work. Especially designed for operating sash in Monitors and other styles of Skylights as, by means of idlers, the chain and strap may be carried around corners and angles with the least possible friction. This arrangement is superior to long vertical operating rods, requiring universal joints or miter gears. A heavy roller-bearing support with brace is placed on the main shaft near the large sprocket



TRIUMPH ROLLER-BEARING SASH OPERATOR—STYLE T



STANDARD SASH OPERATOR—STYLE B

STANDARD SASH OPERATOR—STYLE B.—Our Standard Operators are made strong and powerful and are suitable for various kinds of sash.

They are especially adapted for operating simultaneously groups of sash or several parallel runs of sash.

The *Standard, Style B*, will control a run of 125 feet of side-pivoted sash, and of top or bottom-hinged sash in proportion. *Holds and locks the sash in any position.*

Made in several sizes, and modified to suit the conditions of each case.

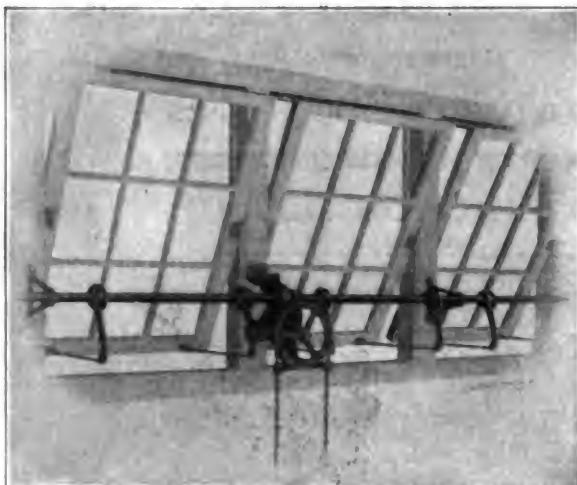
"A.B.C." SYSTEMS

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IDEAL SASH OPERATOR — STYLE I. — The Ideal Operator is a simple, inexpensive device, suitable for various kinds of sash. It is particularly adapted for operating sash in Skylights and Ceiling Lights and in all cases where a vertical operating rod cannot be applied.

This Operator will control a run of 100 feet of side-pivoted sash, and of top or bottom-hinged sash in proportion. *Holds and locks the sash in any position.*

Made in several sizes.



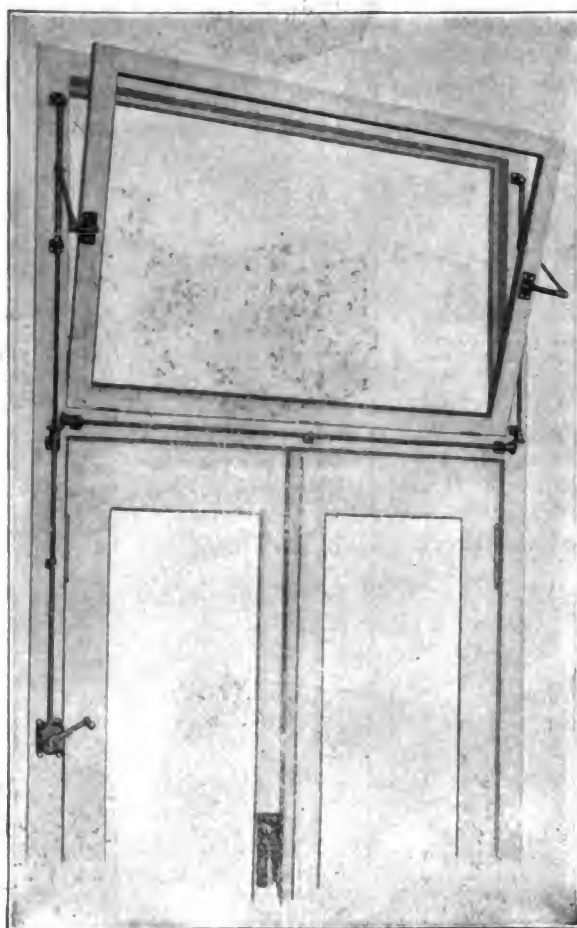
IDEAL SASH OPERATOR—STYLE I

VICTOR ROLLER-BEARING SASH OPERATOR—STYLE V. — The Victor Operator is especially designed for working top and bottom-pivoted or side-hinged sash. It has a worm and gear and is a reliable and powerful device.

The shaft brackets are provided with rollers on which the shaft travels while in motion, reducing the friction to a minimum.

This Operator will control a run of 500 feet in length of top and bottom-pivoted or of side-hinged sash. *Holds and locks the sash in any position.*

Made in several styles.



DUPLIX SAFETY TRANSOM OPERATOR

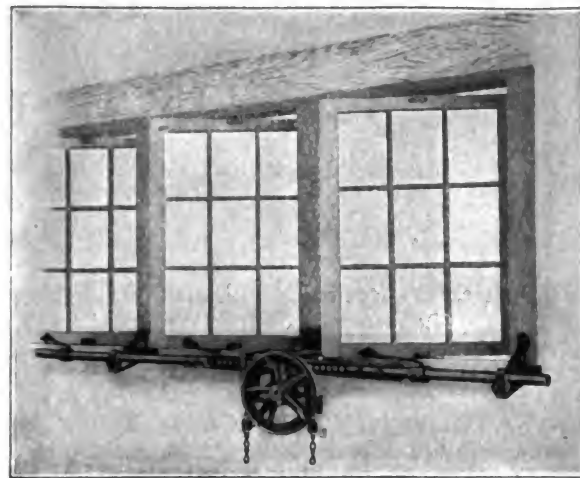
DUPLEX SAFETY TRANSOM OPERATOR—The DUPLEX is a perfect and safe device for operating large transom sash. Strong, double-cut solid brass screws or worms, vertically located on either side of the sash, furnish ample power to operate with ease the largest sash. *Holds and locks the sash in any position.*

Made in two sizes and modified to suit the conditions of each case.

PILOT STRAIGHT-PULL SASH OPERATOR—(Patent applied for.) This Operator is of the *horizontally-moving* or tension-shaft style, specially intended for side-pivoted sash. The rods or shafts are of solid steel. The brackets, arms and connecting rods which attach to the mullions and sash are also of steel, with brass washers between the riveted joints to prevent friction and rusting.

The worm and gear which produce the power have bronze bearings and are enclosed in a strong iron case excluding dirt.

"A.B.C." SYSTEMS

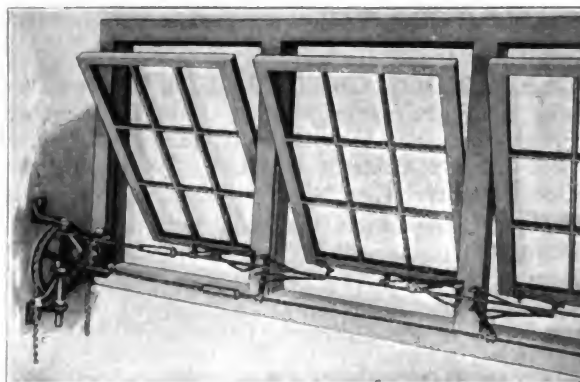
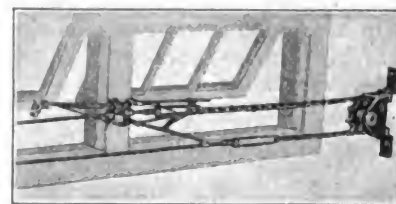


VICTOR ROLLER-BEARING SASH OPERATOR—STYLE V

The lower picture shows the return idler with swivel frame and bolting bracket which is placed at the other end of each run of sash to be operated.

The hand chain is electro-galvanized finish and is generally brought straight down within easy reach from the floor. Will control a run of several hundred feet in length of side-pivoted sash. *Holds and locks the sash in any position.*

For continuous top-hinged sash see our Peerless Operator.

PILOT STRAIGHT-PULL SASH OPERATOR
Patent Applied For

Engineers and Architects who are using our goods.

CHICAGO, ILL.
D.H. Burnham & Co.
Nimmons & Fellows
Holabird & Roach
Shepley, Rutan & Coolidge
Geo. M. Brill

NEW YORK, N. Y.
Ford, Bacon & Davis
Reed & Stem
McKim, Mead & White

CLEVELAND, OHIO
Hubbel & Benes
George S. Reider
E. E. Smith

LOUISVILLE, KY.
D. X. Murphy & Bro.
Kenneth McDonald & W. J.
Dodd
Clarke & Loomis

And many others

DETROIT, MICH.
Rogers & McFarland
Albert Kahn

ST. LOUIS, MO.
Widemann & Walsh
Wm. B. Ittner
E. C. Klipstein
Mauran & Russell
Isaac Taylor
Lichter & Jennis

R. H. Gardner & Co.

Manufacturers of
Hardware Specialties
130 NORTH JEFFERSON STREET
CHICAGO, ILL.

PRODUCTS—BUILDERS' HARDWARE SPECIALTIES; MARBLE TRIM, for Lavatories; SPRING HINGES, STRIKES, BOLTS, LEGS AND STANDARDS, for Lavatories; EXPANSION BOLTS, for installing Fixtures on Marble, Tile and Slate

LAVATORY HINGES—No. 64 Spring Hinges, as shown herewith, with adjustable flange for marble 1" to 1 3/8" thick, and **No. 64A Spring Hinges** for marble 1 1/2" to 1 7/8" thick. Also with fixed flanges for marble 7/8" to 2 1/2" thick. With regular springs to hold doors closed and with reverse springs to hold doors open.

STRIKES FOR LAVATORY DOORS—Adjustable and fixed flange strikes, as shown herewith, with rubber bumpers, for use with Lavatory Spring Hinges. For doors swinging in or out.

NO. 70 MORTISE BOLT—For Lavatory Doors, as shown herewith. Are used with the Strikes above described.

NO. 142 DOOR HOLDER—As shown herewith; are of Plain Bronze with a heavy rubber bumper to prevent the damaging of doors when forcefully thrown back against walls. Made for single or double doors.

PRICE LIST.

No. 142 Holder for one door, Rubber 2 1/2" x 3".....\$3.00 each
No. 143 Holder for two doors, Rubber 2 1/4" x 4"..... 4.50 each

CABLE DOOR CHECKS—Used in connection with a check and swing to prevent doors swinging beyond a given angle. Prices given are for Bronze Metal. Will give prices on application if Steel Cable is desired. Special fittings made for Iron Door Frames. Give length of fixtures over all in ordering.

No. 1 Cable Check is made in 3/16 in. cable; No. 2 Cable Check is made in 1/4 in. cable.

PRICE LIST

No. 1 Plain Bronze.....\$30.00 dozen
No. 2 Plain Bronze, 28" long..... 36.00 dozen

EXPANSION SHELLS—As shown, are a One-piece Composition Shell for installing fixtures in Marble, Tile or Slate. Made for 3/16" and 1/4" Machine Screws. Diameter of shell 3/8", length 7/8".

PRICE LIST

Shells and Nuts only, per 1000.....\$35.00
Shells and Nuts only, per 100..... 4.00
Shells and Nuts with 1 1/4" or 1 1/2" flat or round head Machine Screws, nickel-plated or plain brass, per 100..... 6.50
Shells and Nuts with 2" threaded wire and N. P. or Plain Brass Hexagon Nuts, per 100..... 7.50

INFORMATION AND CATALOGS—We also manufacture sundry special hardware which we do not illustrate here. Also lavatory trim for government work in accordance with the specifications for 1910 for the Army, Navy and Treasury Departments. Our general catalog illustrating the full line of our products will be sent on application.

"A.B.C." SYSTEMS



NO. 64 LAVATORY SPRING HINGE



NO. 70 MORTISE BOLT

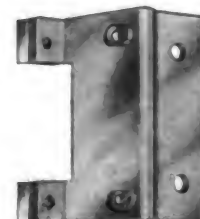
Price \$1.50 each



NO. 64 LAVATORY BLANK HINGE

PRICE LIST—LAVATORY HINGES

No. 64 Spring Hinge..... \$4.50 pair
No. 64A Spring Hinge..... 4.50 pair
No. 64 Blank Hinge..... 3.00 pair



NO. 72 STRIKE

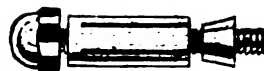
For doors swinging out.
Use with bolt No. 68.
Price \$1.20 each



CABLE DOOR CHECK

PRICE LIST

No. 1 \$30.00 dozen
No. 2 36.00 dozen



EXPANSION SHELL



DOOR HOLDER AND STOP
NO. 142
FOR ONE DOOR

Alfred A. Packer

Manufacturer of Window and Car Ventilators, Electric Fans and Blowers Ventilating Systems Installed

153 LA SALLE STREET
CHICAGO, ILL.

PRODUCTS—"REKCAP" AND "PACKER" NATURAL VENTILATORS, for Use in Cars, Office Buildings, Factories, Churches, Hospitals, Schools, Apartments, etc.

DESCRIPTION—"Rekcap" and "Packer" Ventilators are recognized as standard, having been endorsed and specified for many buildings, including hospitals, schools, banks, office buildings, factories and apartments, from the Atlantic to the Pacific. "Built like the rail," they are especially attractive for sash rail installation, combining good appearance, capacity, efficiency and simplicity to the highest degree.

The "Rekcap" consists of ventilator shell, or box, secured to the inside of the sash rail; within this box a deflector cover centrally pivoted; screen of the desired mesh within box; a hood attached to outer side of rail, and rods connecting deflector cover with outer hood.

The box or shell is designed to provide for maximum ventilation capacity without weakening the rail or sacrificing artistic appearance. The screen ordinarily used is a 20 mesh, and this is so arranged within the shell on the line of a circular arc as to give a free area, after allowing for screen resistance fully equal to the area of the opening in top of ventilator. Screen resistance and capacities are factors that must be considered in determining the value of any ventilator.

The deflector cover performs invaluable service:

First, as a cover to regulate by its position the volume of air admitted;

Second, as a deflector to control positively the direction of the air currents, overcoming the possibilities of direct drafts;

Third, to automatically control, through the use of the connecting rod, the position of outer hood.

THE COLLAPSIBLE OUTER HOOD—As explained, the position of this part is governed by the position of the deflector cover. When ventilator is closed by deflector cover being placed horizontally, the outer hood is in a vertical position and in contact with the rail at all points, thus adding further to the weather-proof qualities of the ventilator and permitting upper and lower sash to clear.

STYLES—The "Rekcap" Ventilators are made in three styles:

A, for apartments;

B, for office buildings, hospitals, etc.;

C, for schools, loft buildings, etc.

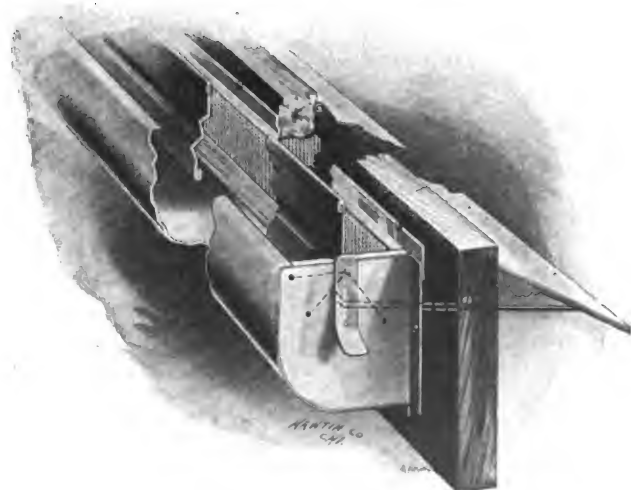
The "Packer," patented February 4, 1908, consists:

First, of a cylinder with longitudinal openings in upper and outer walls;

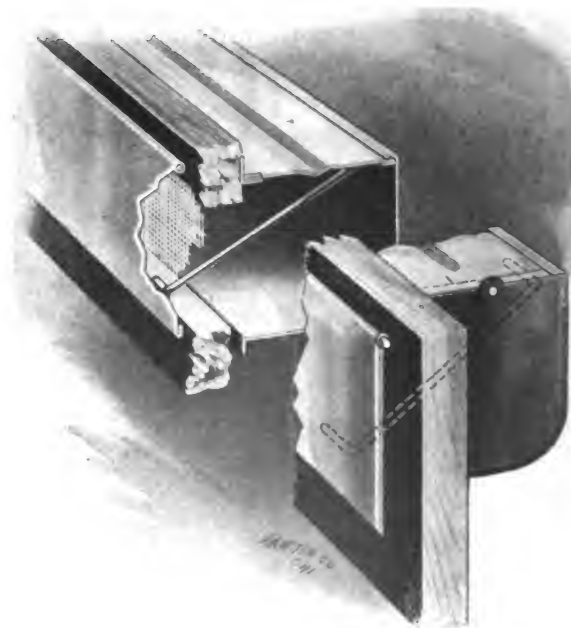
Second, a shutter within cylinder adapted to swing on its axis, and by its position to regulate the volume of air entering the room;

Third, a deflector plate within cylinder to control the direction of air currents in such a manner as to prevent direct drafts;

Fourth, an outer hood with screen attached, preventing the admission of dust, rain and snow.



VIEW OF "REKCAP" OPEN

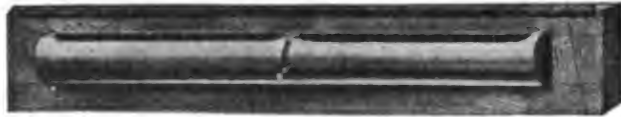


VIEW OF "REKCAP" CLOSED

"A.B.C." SYSTEMS

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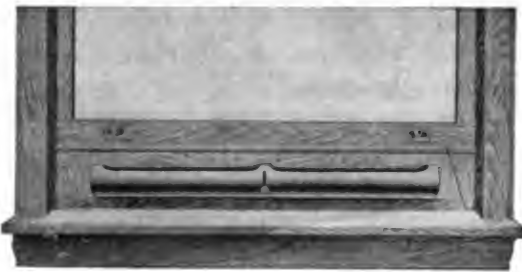
MATERIAL—"Packer" ventilators are made of half-hard brass or of copper, when so specified. The "Rekcap" ventilators are made of half-hard brass, except deflector cover and hood, which are made of Sherardized steel or other non-corrosive metal.



INSIDE VIEW, PANEL INSTALLATION



OUTSIDE VIEW, PANEL INSTALLATION



PANEL INSTALLATION



SASH RAIL INSTALLATION

IMPORTANT—Specify a $4\frac{1}{4}$ " rail; that will accommodate the largest ventilator.

INSTALLATION—1. Sash Rail—This is the ideal method of installation from every point of view. To new buildings they may be applied at the time of construction at a minimum cost and with a capacity fully equal to that obtained from the average panel ventilator;

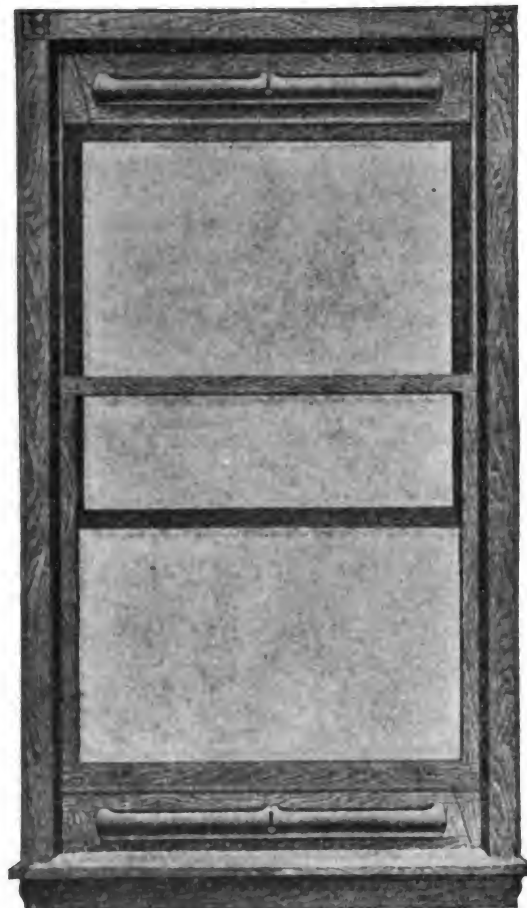
2. Panels—Both "Rekcap" and "Packer" Ventilators are supplied in panels for either top or bottom installation;

3. Plate Glass Windows—Use of skeleton panels are suggested, plate glass being removed and shortened to accommodate same;

4. Wall Installation—In new buildings of brick or concrete, hollow spaces or ducts may be provided for passage of the air, and ventilator parts attached to either end thereof.

The method of air supply introduced through the use of "Packer" and "Rekcap" ventilators is endorsed by the highest Authorities and Ventilating Commissions in the World.

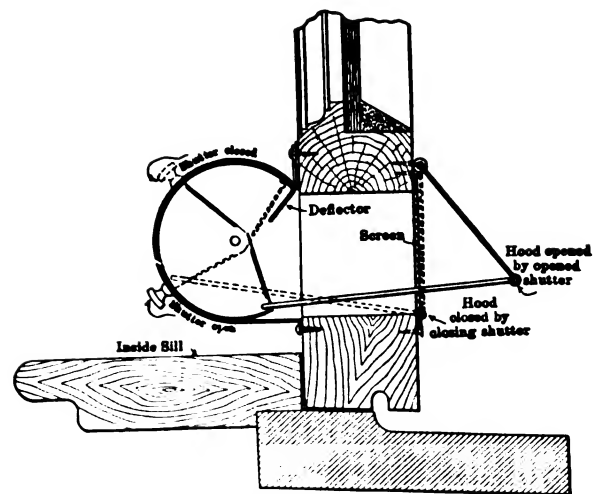
"A.B.C." SYSTEMS



TOP AND BOTTOM PANEL INSTALLATION



THREE-QUARTER VIEW OF VENTILATOR



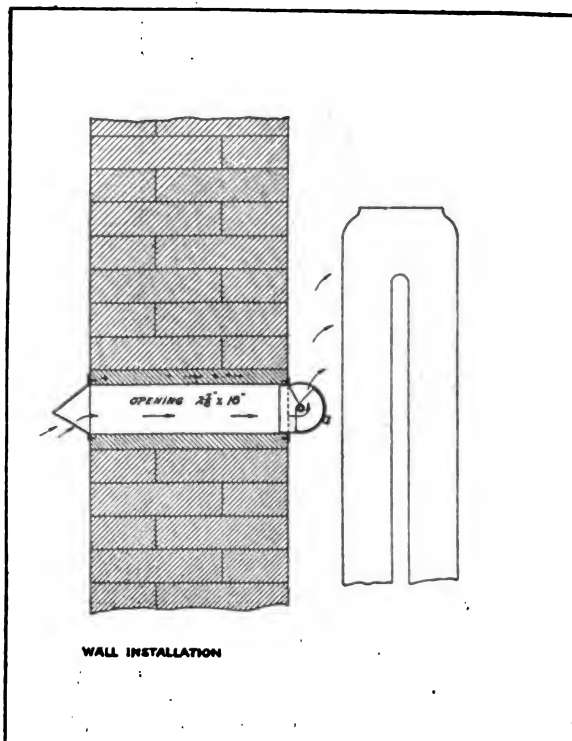
SECTIONAL VIEW

Continued on next page

BUILDINGS FOR WHICH "REKCAP" OR "PACKER" VENTILATORS HAVE BEEN ENDORSED OR SPECIFIED

Building and Location	Architect
Oliver, Pittsburgh, Pa.	D. H. Burnham & Co., Chicago, Ill.
Allworth, Duluth, Minn.	D. H. Burnham & Co., Chicago, Ill.
Monmouth Hospital, Monmouth, Ill.	Meyer J. Sturm, Chicago, Ill.
Court House, Kankakee, Ill.	Zachary T. Davis, Chicago, Ill.
St. Andrew's Parochial School, Chicago, Ill.	Zachary T. Davis, Chicago, Ill.

Building and Location	Architect
A., T. & S. F. Ry. General Offices, Topeka, Kan.	Root & Siemans, Kansas City, Mo.
White & Glahn Shoe Factory, Brooklyn, N. Y.	L. Almendinger, Brooklyn, N. Y.
Court House, Suisun, Cal.	Hemmings & Jones, San Francisco, Cal.
U. S. Post Office, Knoxville, Tenn.	James Knox Taylor, Washington, D. C.
Lake View Hospital, Chicago, Ill.	Meyer J. Sturm, Chicago, Ill.
Fresh Air Hospital, Chicago, Ill.	Meyer J. Sturm, Chicago, Ill.
Milwaukee Hospital, Milwaukee, Wis.	Meyer J. Sturm, Chicago, Ill.
St. Joseph's Hospital, Sioux City, Iowa	Buechner & Orth, St. Paul, Minn.
Lutheran Seminary, St. Paul, Minn.	Buechner & Orth, St. Paul, Minn.
Washington County Hospital, Washington, Iowa	
First Nat'l Bank Bldg., York, Neb.	Ferd C. Flake, Lincoln, Nebr.
First Nat. Bank Bldg., Johnstown, Pa.	Sam'l Hannaford & Son, Cincinnati, Ohio
Union Trust Co., Winnipeg, Man.	John D. Atchison, Winnipeg, Man.
John Deere Plow Works, Portland, Ore.	O. A. Eckerman, Moline, Ill.
Public School, Pittsburgh, Pa.	



SECTIONAL VIEW, BRICK WALL INSTALLATION



METAL CYLINDER AND OUTER HOOD

PRICES AND MISCELLANEOUS DATA

"REKCAP" VENTILATORS

Style	Length, Inches	Price F.O.B. Chicago	Ventilator Capacity Free Area, Square Inches	Rail Opening for Ventilator, Inches	Depth Rail, Inches
A	12	\$2.75	12	1 1/2 x 12	2
A	18	3.50	18	1 1/2 x 18	2
A	24	4.25	24	1 1/2 x 24	2
B	12	3.00	18	2 x 12	2 1/2
B	18	3.75	27	2 x 18	2 1/2
B	24	4.50	36	2 x 24	2 1/2
C	12	3.50	24	2 1/2 x 12	3
C	18	4.25	36	2 1/2 x 18	3
C	24	5.00	48	2 1/2 x 24	3

"PACKER" VENTILATORS

Length, Inches	Price F.O.B. Chicago	Ventilator Capacity Free Area, Square Inches	Rail Opening for Ventilator, Inches	Depth Rail, Inches
12	\$3.50	15	2 x 11 1/2	3
18	4.75	24	2 x 17 1/2	3
24	5.75	33	2 x 23 1/2	3
30	6.75	41	2 1/2 x 29 1/2	4 1/2
36	8.00	50	2 1/2 x 35 1/2	4 1/2

"PACKER" Ventilators 12", 18" and 24" are 3" diameter
30" and 36" " 3"

"REKCAP" Ventilators, Style "A," are 1 1/2" x 1 1/2" ends.
"B," " 2" x 2"
"C," " 2 1/2" x 2 1/2"

Depth of rail given is clearance required above window stool. Special discounts on application.

"A.B.C." SYSTEMS

SECTION 20

Glass and Glazing, Mirrors, Glass Tile, etc.

(Prism Glass for Pavement Lights, etc. see Section 15)

Section Synopsis

A. Sheet Glass; Plate Glass, rough, ribbed, polished, figured; Ground Glass; Wire Glass; Skylight and Floorlight Glass; Glass Brick; Prismatic, Chequered, Chipped, Embossed, Etched, Cut, and Stippled Glass; Pressed Prism Glass; Table and Counter Tops; Dissecting Slabs; Plumbers' Slabs and Partitions, Etc.; Glass Tile for all purposes.

B. Clear and Stained Cathedral Glass, hammered and smooth; Jewels and Special Products; Stained Glass Design and Workers; Art Glass Painting; Glass Mosaic; Leading, Camees; Commercial Painted Glass; Glass Signs

C. Silvered and Composition Mirror Glass and Work

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX		
REGULAR CLASSIFICATION		
A	1	Chequered, chipped, embossed, and figured glass of all kinds
	2	Cut, etched and stippled glass
	3	Glass brick
	4	Glass tile, all purposes
	5	Ground glass
	6	Plate, polished, American, imported
	7	Plate, rough, rolled, hammered, ribbed, pressed
	8	Plumbers' glass work, slabs, partitions, etc.
	9	Pressed prismatic glass
	10	Sheet, standard, clear, colored, single and double thick
	11	Sheet, special, crystal crown, etc.
	12	Skylight and floorlight glass
	13	Table tops, counter tops, dissecting slabs, opalescent, clear
	14	Vault light and skylight, cast and pressed prismatic glass
	15	Wire glass, clear, polished, rough
B	20	Art glass painting
	21	Cames, lead ornaments, for leading
	22	Cathedral glass, clear, stained, all varieties
	23	Commercial painted glass
	24	Glass mosaic
	25	Glass signs
	26	Jewels, rondels and special features
	27	Memorial windows
	28	Stained glass design and work, all purposes
	C	35	Mirror and glass work:—
36		Composition glass Silvered glass
SPECIAL CLASSIFICATION		
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.		
	41	Electric signs (S. 34 A)
	42	Glass knobs, escutcheons, push plates, etc. (S. 19 A)

43	Glass furnishings for plumbers' work (S. 35 B) Glassware for illuminating fixtures:—
44	Chimneys, globes, shades, domes, reflectors, etc. (S. 42)

TRADE NAMES AND BRANDS					
"Luxfer", prismatic cast and pressed glass S. 15 E, Cat. 2.					
"R. & E.", ornamental glass, Cat. 2					
"3-Way", prismatic cast and pressed glass, S. 15 E, Cat. 1					

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
B 2	Clinton Glass Co. Chicago, Ill.	1 2	20	22 23 24 26 27 28		
B 1	National Ornamental Glass Manufacturers' Ass'n. Chicago, Ill.		20	22 24 27 28		44
A 1	Rawson & Evans Chicago, Ill.	1 2 4 5	20	22 23 24 25 26 27 28	35 36	41

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.

American Luxfer Prism Co.
S. 15 E, Cat. 2
(Prismatic cast and pressed glass for store fronts, vault lights, etc.)

American 3-Way Prism Co.
S. 15 E, Cat. 1
(Prismatic glass for store fronts, vault lights etc.)

Glass Brick Co., The
S. 8 A, Cat. 4
(Glass brick)

National Lead Co.
S. 35 A, Cat. 1
(Cames and lead ornaments)

Manufacturers without Catalog data	Sub-Index Number					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
Advance Glass Co. Utica, N. Y.	7 10		22			Glenny Glass Co., Wm. Cincinnati, Ohio	1 2 5 6 7 8 9 10	11 12 13 15	22	36		Petgen Co. Pittsburgh, Pa.	1		21 22 24 28		
Alberts, J. B. Louisville, Ky.			24 27 28									Phipps & Co., Horace J. Boston, Mass.			21 22 28		
Allegan Mirror Plate Co. Allegan, Mich.	6 7 9 10	13	22	36	42	Goodhue Co., Harry El- dridge Cambridge, Mass.			21 22 27 28			Pittsburgh Art Glass Co. Pittsburgh, Pa.			21 22 27 28		
Allegheny Plate Glass Co. Glassmere, Pa.	6					Griffen, Benjamin. New York, N. Y.	1 5 6 7 8 9 10	11 12 13 15		36		Pittsburgh Plate Glass Co. Pittsburgh, Pa.	1 2 5 6 7 9 10	11 12 13 15		36	42 43 44
American Plate Glass Co. Kane, Pa.	6 7	12										Pressed Prism Plate Glass Co. Chicago, Ill.	1 7 9	12			
Art Glass Co. Kokomo, Ind.		13				Haskins Art Glass Co. Rochester, N. Y.	1 5 6 9	12 13 15	22	36		Quaile, William B. New York, N. Y.			24 28		
Bartleson Bros. New York, N. Y.	6 7 10	11		35 36		Henderson Bros. New York, N. Y.			22 23 28			Riordan & Co., G. C. Cincinnati, Ohio			22 24 25 26 27 28		
Bournique Glass Co. Kokomo, Ind.		13				Highland Glass Co. Washington, Pa.	7 9	12 15	22			Rodefer Glass Co. Bellaire, Ohio		12			
Camp Glass Co. Mt. Vernon, N. Y.	10					Hopper-Dombrink Art Glass Co. Oakland, Cal.	2	13	24 25 27 28		42 43	Rossbach Art Glass Works. Columbus, Ohio			22 24 27 28	35 36	
Century Stained Glass Works, Ltd. Philadelphia, Pa.			21 22 28			Indianapolis Art Glass Co. Indianapolis, Ind.			22 23 27			Rudy Co., C. D. Harrisburg, Pa.			22 27 28		
Chapin, L. S. Rochester, N. Y.			28			Jackson Glass Works. Jackson, Mich.		13	27	35 36		Saginaw Plate Glass Co. Saginaw, Mich.	6				
Church Glass & Decorating Co. New York, N. Y.	6 7		21 22 24 26 27 28			Jones Decorative Glass Co., Thos. Brooklyn, N. Y.	1 2 5 9	13	22 25 27 28	35		Semon, Bache & Co. New York, N. Y.	1 2 5 6 7 9 10	11 12 13 15	22 26 36	35 42 43	
Cincinnati Sand Blast Co. Cincinnati, Ohio	1 2 5		25		43	Kahn, Jacques. New York, N. Y.	1 6	13		36		Sharpe Bros. Newark, N. Y.			21 22 27		
Colonial Art Glass Co. Chicago, Ill.			22 24 27 28		43 44	Kinsella & Co., John J. Chicago, Ill.	1 5 6 7 9 10	15	22 25 26 27 28	36		Slane Glass Co., O. W. Statesville, N. C.	6			35 36	
Columbia Plate Glass Co. Blairsville, Pa.	5 6 7	12 13				Kittanning Plate Glass Co. Kittanning, Pa.	5 6					Smith & Sons, H. J. Philadelphia, Pa.			22 28		
Columbus Plate & Window Glass Co. Columbus, Ohio	1 5 6 7 8 9 10	11 12 15				Lamb, J. & R. New York, N. Y.			24 27 28			Smith, Thomas J. D. Newark, N. J.	6	13	28	36	
Conroy-Prugh Co. Pittsburgh, Pa.	6 7 9 10	12 13 15		36	43	Louisiana Glass & Mirror Works, Ltd. New Orleans, La.	1 5 6 7 9 10	11 12 13 15	22 27 28	36	43	Sneath Glass Co. Hartford City, Ind.		12	25 26		42 43 44
Dallas Art Glass Co. Dallas, Tex.	5 7 9 10	11 12 13 15	21 24 25 26 27 28	36		Lum, Geo. Renwick. S. Wilton, Conn.			24 27			Solar Prism Co. Cleveland, Ohio	9	12			
Dannenhoffer Glass Works. Brooklyn, N. Y.			28			Maltby Prism Co. New York, N. Y.	9					Spiers-Lederle Glass Co. New York, N. Y.	6 7 10		21 22 24 27 28	35 36	
Dayton Art Glass Works Dayton, Ohio		13	27 28	35 36		Marietta Glass Mfg. Co. Indianapolis, Ind.	1					Standard Plate Glass Co. Butler, Pa.	1 5 6 7 10	12	21 22	35 36	
Detroit Window & Stained Glass Co. Detroit, Mich.	6 10		22 27 28			Mississippi Glass Co. New York, N. Y.	7	12 15				Steuben Glass Works. Corning, N. Y.			21 22 24 27 28		44
Donnelly Co., J. R. Brooklyn, N. Y.	1 2 3 5 6 7 8 9 10	11 12 13 15		36	42 43	Mississippi Wire Glass Co. New York, N. Y.	1 7	12 15				St. Louis Plate Glass Co. Valley Park, Mo.	6 7 11	12 13 21	28 35		
Falconer Mirror Co. Falconer, N. Y.	6	12 13 15		36		Morris & Co., Theo. W. New York, N. Y.	6 7					Swindell Bros. Baltimore, Md.	1 2 5 6 7 9 10	11 12 13 15	21 22 25 26 27 28		
Planagan & Biedenweg Co. Chicago, Ill.			22 24 25 26 27 28			Neidt Glass Factory. Brooklyn, N. Y.			22 24 26 28		43	Texas Art Glass Co. Houston, Tex.	1 5 6 7 9 10	11 12 13 15	22 25 27 28	35 36	
Ford Bros. Glass Co. Minneapolis, Minn.			21 22 23 24 25 26 27 28			New Bethlehem Window Glass Co. New Bethlehem, Pa.	10	11				Utica Glass Co. Utica, Ohio		11			
Ford Plate Glass Co., Ed- ward Rossford, Ohio						O'Halloran's Sons, Thomas. Newark, N. J.			21 27 28			Von Gerichten Art Glass Co. Columbus, Ohio	1 2 5 6 7 8 9 10	11 12 13 15	22 24 25 26 28	36	
Geissler, R., Inc. New York, N. Y.			21 22 23 24 25 26 27 28			Opalescent Glass Works Kokomo, Ind.		11 13				Western Glass Co. Streator, Ill.	1 7	12 15			
						Opalite Tile Co. Monaca, Pa.	6 7	12 13				Western Sand Blast Mfg. Co. Chicago, Ill.	1 5		25	36	
						Ornel Glass Co. St. Louis, Mo.	6 7	11				Wissmach Glass Co., Paul, Inc. New York, N. Y.			22 26		
						Other & Co., J. St. Louis, Mo.	10 1		24 27 28			Wood Glass Co. Syracuse, N. Y.	1 5 6 7 9 10	11 12 13 15	22	36	
						Payne Studios, George Hart, Inc. Paterson, N. J.			27 28								
						Penn. American Plate Glass Co. Alexandria, Ind.	6 7			36							
						Penn. Wire Glass Co. Pittsburgh, Pa.		15									

"A.B.C." SYSTEMS

Continued on next page

"R & E" ORNAMENTAL GLASS—We produce every style of Decorative Glass, including Ground, Chipped, Embossed, Enameled, Sandblast, Wheel-cut, Mitered, Acid-Stippled, Geometric-Chipped, Etched, Beveled, Cathedral, Opalescent, Lettered, Gilded; Glass Tiles; Mirrors; Resilvering; and Specialties.

OFFICE PARTITION GLASS—The finest effects obtainable in Bank and Office partition glass is made by our special process of acid stippling. The glass may be plain stippled all over or have clear or obscure border lines. We frequently make this glass with the border line in chipped or burnished gold. The effect thus obtained is very handsome.

While the stippled surface is perfectly obscure it does not obstruct light in the least, and has a soft, restful effect that harmonizes well with any interior finish.

Designs 0472, 0260, 0261, 0471 and 0257 are specimen patterns in the embossed and stippled work. When required we furnish special designs, or work to Architects' own drawings.

A FEW INSTALLATIONS—Post Offices of Chicago, Buffalo and Indianapolis Stock Exchange Bldg., Chamber of Commerce, Corn Exchange Bank, Monadnock Block, Harris Trust & Savings Bank, La Salle Hotel, Union Bank and Shearson & Hammill Co., Chicago Whitney Central Bank, New Orleans, La. First Nat. Bank, Lincoln, Neb. Aurora Nat. Bank, Aurora, Ill.—Third Nat. Bank, St. Louis, Mo.—American Nat. Bank, Richmond, Va.—Wells Fargo Nevada Nat. Bank, San Francisco, Cal.—Omaha Nat. Bank, Omaha, Neb.

DESIGNS—
03088, 03091,
03109, 03110,
Mitered Beveled Plate.

1-N, 2-N, 03077, Crystal Sheet in hard metal.
03103, 03104, 03105, 03106,
03107 and 03108, Art Glass in lead or hard metal.

03098, 03102, Beveled Plate in hard metal.

03, Beveled Plate Single Chipped.

0472 Satin Finish acid on clear.

0263 Chipped Gold Line on stippled acid base, clear top.

0262, Chipped Border on either clear or ground surface.

0257, 0261, 0471, Clear Border on stippled acid.

0260 Clear Border on ground or reverse.

0259, A combination of grinding and chipping.

0258, "Perfection" (Triple) chipped.

027, Stock Geometrical chipped, clear lines, ground diamonds.

0475, Chipped base and lettering, clear top.

0114, A combination of grinding and chipping.

Any of the ground, chipped or stippled designs can be furnished on double strength, 3/16" American or Plate Glass. Prices and sketches, together with samples, submitted for any work on inquiry accompanied by necessary information.

DIAMONDS

"A.B.C." SYSTEMS

National Ornamental Glass Manufacturers' Association of the United States and Canada

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312 W. ILLINOIS STREET
CHICAGO, ILL.

OBJECT OF ASSOCIATION—This association was organized for the purpose of effecting improvement in the design and execution of Art Windows, including Stained and Clear Leaded Glass Work.

MEMBERSHIP—The members comprise Manufacturers and Craftsmen in Glass as follows: Ornamental, Art, Metallic, Beveled, Clear and Stained Leaded, Mosaic, Mitered.

Their work also covers: Church Windows, Memorial Windows, Decorative Art Domes and Shades, Pictorial Painting on Glass, etc.

ORNAMENTAL GLASS IN THE ARTS—The Architects of the United States are cordially invited to co-operate with this Association in its labors towards the restoration of **Ornamental Glass** to its proper place in the decorative arts and the achievement for it of the highest possible position.

The influence of the architectural profession may be exerted along these lines by a rigid insistence that all ornamental glass shall be truly artistic in design and of first-class material and workmanship, and remunerated at prices commensurate with the skill required for its production.

Such prices will permit artists of ability to devote their time to the study of glass as a medium of artistic expression. Action along such lines by architects in general will soon accomplish a marked revival of the beauties and embellishing applications of one of the most important among the decorative arts.

SEPARATE CONTRACT, OR RESERVED—The products of the members of this Association constitute an industrial rather than a mechanical art. It is advisable, therefore, that Architects shall specify our Products either under a separate contract, or as reserved.

By such a course these results will be secured: Better and more artistic work; more satisfactory arrangement between Architect, Owner and Craftsman; elimination of the abuses of the present system.

"A.B.C." SYSTEMS

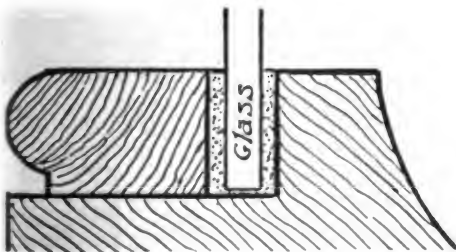


AN AMERICAN ECCLESIASTICAL WINDOW

Continued on next page

MEMBERSHIP LIST—The following firms are members of the Association:

CITY	FIRM NAME	STREET ADDRESS	CITY	FIRM NAME	STREET ADDRESS
ALLENTOWN, PA.	Neff, Chattoe & Co.	911 Linden Street	LA CROSSE, WIS.	The Art Glass Co.	123 Front Street
ATLANTA, GA.	Atlanta Art Glass Co.	12 Forsyth Street	TORONTO, ONT., CAN.	The Hobbs Mfg. Co.	
BOSTON, MASS.	Thomas J. Murphy	471 Tremont Street	LOUISVILLE, KY.	Peaslee-Gaulbert Co.	407 W. Main Street
BOSTON, MASS.	Horace J. Phipps & Co.	60 Kingston Street	MEMPHIS, TENN.	Binswanger & Co.	2 Calhoun Street
BOSTON, MASS.	Geo. W. Wise & Co.	65 Franklin Street	MILWAUKEE, WIS.	Milwaukee Mirror & Art Glass Co.	203 Broadway
BRIDGEPORT, CONN.	Bridgeport Art Glass Co.	153 John Street	NASHVILLE, TENN.	Warren Bros. Co.	200 3rd Avenue N.
BROOKLYN, N. Y.	Art Glass Works	1471 Fulton Street	NEW HAVEN, CONN.	Henry Puddicomb	73 Orange Street
BROOKLYN, N. Y.	Colonial Art Glass Co.		NEW YORK, N. Y.	Castle Montague Co.	39 E. 19th Street
BROOKLYN, N. Y.	Maskell T. Lamb	44 Bergen Street	NEW YORK, N. Y.	Colgate Art Glass Co.	8 Gansvoort Street
CAMBRIDGE, MASS.	The Harry E. Goodhue Co.	23 Church Street	NEW YORK, N. Y.	Decorative Stained Glass Co.	46 Washington Square, South
CHICAGO, ILL.	Geo. H. Anderson & Co.	1858 W. Kinzie Street	NEW YORK, N. Y.	James Dougherty	435 W. Broadway
CHICAGO, ILL.	Chicago Mirror & Art Glass Co.	216 N. Clinton Street	NEW YORK, N. Y.	Geo. Durhan	155 E. 42nd Street
CHICAGO, ILL.	Clinton Art Glass Co.	1000 W. 21st Street	NEW YORK, N. Y.	Heinigke & Bowen	24 E. 13th Street
CHICAGO, ILL.	H. Eberhardt & Co.	2411 W. 12th Street	NEW YORK, N. Y.	J. & R. Lamb	25 6th Avenue
CHICAGO, ILL.	The Flanagan & Biedenweg Co.	318 W. Illinois Street	NEW YORK, N. Y.	John Morgan & Sons	32 E. 9th Street
CHICAGO, ILL.	The Galloway Glass Co.	406 N. Clinton Street	NEW YORK, N. Y.	G. Rae & Co.	173 Prince Street
CHICAGO, ILL.	Giannini & Hilgart Glass Co.	211 W. Madison Street	OAKLAND, CAL.	Hooper & Dobrink	434 San Pueblo Avenue
CHICAGO, ILL.	W. H. Helmerich & Co.	727 Fulton Street	PHILADELPHIA, PA.	Century Stained Glass Works, Ltd.	212 S. 11th Street
CHICAGO, ILL.	Heroy Glass Co.	2271 Lumber Street	PHILADELPHIA, PA.	H. J. Smith & Sons	236 S. 8th Street
CHICAGO, ILL.	H. M. Hooker Co.	651 Washington Blvd.	PITTSBURGH, PA.	Henry Hunt	
CHICAGO, ILL.	Linden Glass Co.	1216 Michigan Avenue	PITTSBURGH, PA.	Twin City Art Glass Co.	
CHICAGO, ILL.	The Munich Studio	222 W. Madison Street	PITTSBURGH, PA.	Pittsburgh Art Glass Co.	1026 Fifth Avenue
CHICAGO, ILL.	D. I. Newhouser & Co.	242 So. Water Street	RACINE, WIS.	Lindorf Art Glass Works	
CHICAGO, ILL.	Rawson & Evans	710 Washington Blvd.	READING, PA.	J. M. Kase & Co.	
CHICAGO, ILL.	Schuler Art Glass Co.	541 W. Jackson Blvd.	ROCHESTER, PA.	Haskins Art Glass Co.	72 S. Clinton Street
CHICAGO, ILL.	Schuler-Mueller Co.	314 W. Superior Street	SAN FRANCISCO, CAL.	San Francisco Art Glass Co.	944 Mission Street
CHICAGO, ILL.	Temple Art Glass Co.	140 W. Michigan Street	SEATTLE, WASH.	C. C. Belknap Glass Co.	Railroad Avenue
CHICAGO, ILL.	Tyler & Hippach Co.	366 W. Ohio Street	SEATTLE, WASH.	Suess Art Glass Co.	2421 Western Avenue
CINCINNATI, OHIO	Foy Art Glass Co.	633 Main Street	ST. LOUIS, MO.	Condie-Neal Glass Co.	2500 Broadway
CINCINNATI, OHIO	G. C. Riordan & Co.	133 East 5th Street	ST. LOUIS, MO.	Emil Frei Art Glass Co.	3715 California Avenue
CINCINNATI, OHIO	The Ruckel Art Glass Co.	535 Sycamore Street	ST. LOUIS, MO.	Jacoby Art Glass Co.	7000 St. Vincent Avenue
CLEVELAND, OHIO	Cleveland Window Glass Co.		ST. LOUIS, MO.	E. F. Kerwin Ornamental Glass Co.	921 N. 6th Street
CLEVELAND, OHIO	Whipple Art Glass Works	46 Michigan Street	TOLEDO, OHIO	Toledo Plate and Window Glass Co.	Elm Street
COLUMBUS, OHIO	Rosbach Art Glass Works	101 West Broad Street	TORONTO, ONT., CAN.	N. T. Lyon Glass Co.	143 Church Street
COLUMBUS, OHIO	Von Gerichten Art Glass Co.	133 So. High Street	LONDON, ONT., CAN.	Luxfer Prism Co.	100 King Street
DAYTON, OHIO	Dayton Art Glass Co.	400 E. 1st Street	TORONTO, ONT., CAN.	Toronto Plate Glass Co.	Don Roadway Street
DENVER, COLO.	The McMurty Mfg. Co.	1716 Arapahoe Street	VANCOUVER, B. C., CAN.	The Modern Leaded Glass Co.	64 Lorne Street, East
DETROIT, MICH.	Detroit Mirror Works	Waterman Ave. and L. S. Railroad	VANCOUVER, B. C., CAN.	Wm. N. O'Neil & Co.	548 Seymour Street
DETROIT, MICH.	Ed. F. Lee Glass Co.	51 Fort Street, East	WINNIPEG, MAN., CAN.	The Winnipeg Paint & Glass Co.	
FORT WAYNE, IND.	Fort Wayne Art Glass Co.	317 E. Columbia Street			
HAMILTON, ONT., CAN.	Hamilton Mirror Plate Co.	82 Queen Street, North			
HARRISBURG, PA.	C. Day Rudy Co.	1835 N. 3rd Street			
HOUSTON, TEXAS	Texas Art Glass Co.				

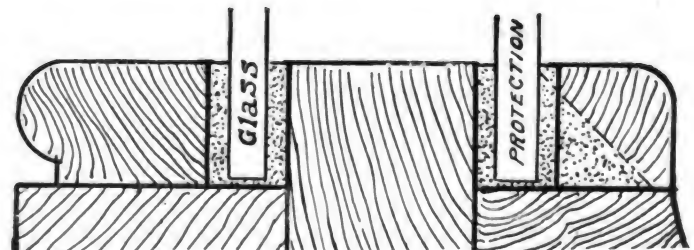


Single Glazing

DETAILS FOR WOOD JAMBS, HEADS AND SILLS

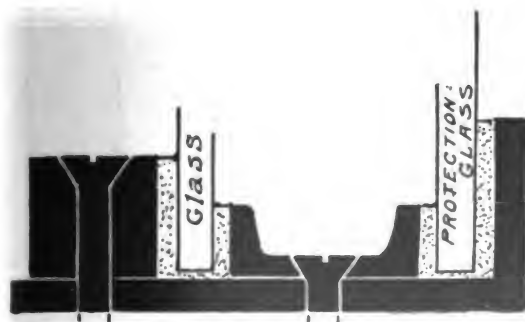
MINIMUM FULL SIZED GLAZING

Details recommended by National Ornamental Glass Manufacturers' Association of the United States and Canada.

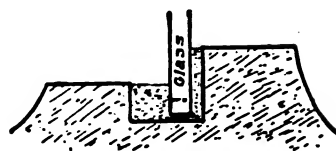


Double Glazing

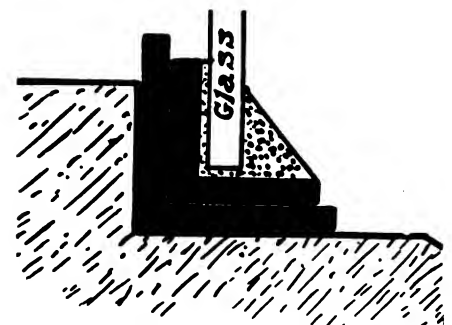
SAME DETAILS FOR STONE, OMITTING LOOSE STRIPS



DETAILS FOR METAL DIVISION BARS AND FOR FRAMING



STONE DETAILS FOR HEADS AND JAMBS



STONE DETAILS FOR SILLS, SHOWING VENTILATOR SETTING

"A.B.C." SYSTEMS

Clinton Glass Company

Manufacturers and Importers of Art Glass

WEST TWENTY-FIRST AND MORGAN STREETS
CHICAGO, ILL.

PRODUCTS—CLEAR DOUBLE STRENGTH GLASS; CLEAR WITH GLASS ORNAMENTS; COLORED ART GLASS; BEVEL PLATE, in Lead, Zinc, Copper, and Brass Settings, all Finishes; LEADED ART CHURCH WINDOWS; MITERED BEVELED PLATE

Importers of WORKS of Wilhelm Derix, Goch & Kevelaer Art Studios

DESCRIPTION—Our work combines the three essential requirements of the architect: Proper and Harmonious Design, Color, and Construction.

The Art Glass for doors, windows, transoms, etc., which we offer, is the best that can be made. The harmonizing of the different colors in colored lights is under the supervision of an artist of high standing in this branch of work. Our Landscape Panels are incomparable in beauty of coloring and designs.

All details of our output receive personal and most careful attention. Years of experience, constant progress and superior equipment enable us to meet the most critical and exacting requirements.

We use only the best materials and employ the most expert workmen. We ship everywhere with perfect safety.

VARIETY OF DESIGNS—We will be pleased to submit special designs whenever required. We can make designs in colors to harmonize with any scheme of interior decorations. Designs for each light are laid out in correct proportions for all sizes and in accordance with approved artistic ideas.

WHEN ORDERING—Order by number only. In giving dimensions be sure that the first figure represents the width and the final figure the height. Always give inches and make measurements accurate. For all odd-shaped windows send full-sized paper patterns.

SPECIAL—When a window is ordered to fill a smaller space or of a different shape than indicated in design, we reserve the right to modify the design and increase the price. When selecting a design, carefully compare the size and shape of glass wanted with the size and shape of design selected. Have them as nearly alike as possible.

PRICES—All prices given in this catalog are for lead setting, unless otherwise specified. Glass for doors, etc., should have hard metal setting, as it is more durable. Prices on glass set in solid brass or copper or special finishes given on application. Inquiries and orders receive prompt attention.

The first cost of our Art Glass is little more than that of inferior work often used; if low cost is the only consideration, use plain window glass. The latter is durable and unobjectionable from an artistic point of view as compared with much of the pseudo art glass whose use is popular in some quarters. The cost of CLINTON PRODUCTS is the lowest consistent with work of its character.



NO. 956

Bevel Plate in Hard Metal Coppered, at \$3.00 per sq. ft. Door Lights should always be set in hard metal.



NO. 808

Carried out in colors. A Beautiful Hall or Stair Landing. \$5.00 per sq. ft.



NO. 1031

Colonial Design, 60 cts. per sq. ft.



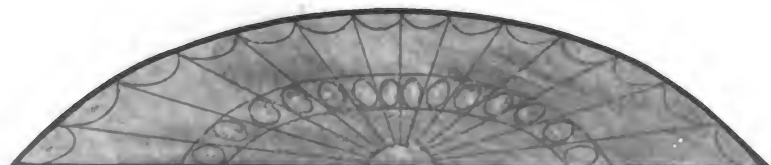
NO. 863

Best Quality of Glass in Colors, \$4.00 per sq. ft.



NO. 1029

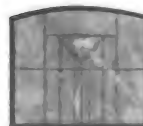
Colonial Design, 60 cts. per sq. ft.



NO. 1027

Our Colonial Designs in Leaded Clear Crystal and Sheet Glass represent the best quality of material and workmanship. 60 cts. per sq. ft.

"A.B.C." SYSTEMS



60 cts. per sq. ft.



60 cts. per sq. ft.

60 cts. per sq. ft.

Continued on next page

WORKS OF WILHELM DERIX, GOCH & KEVELAER ART STUDIOS

Clinton Glass Co., Sole Agents for the United States, Canada and Mexico



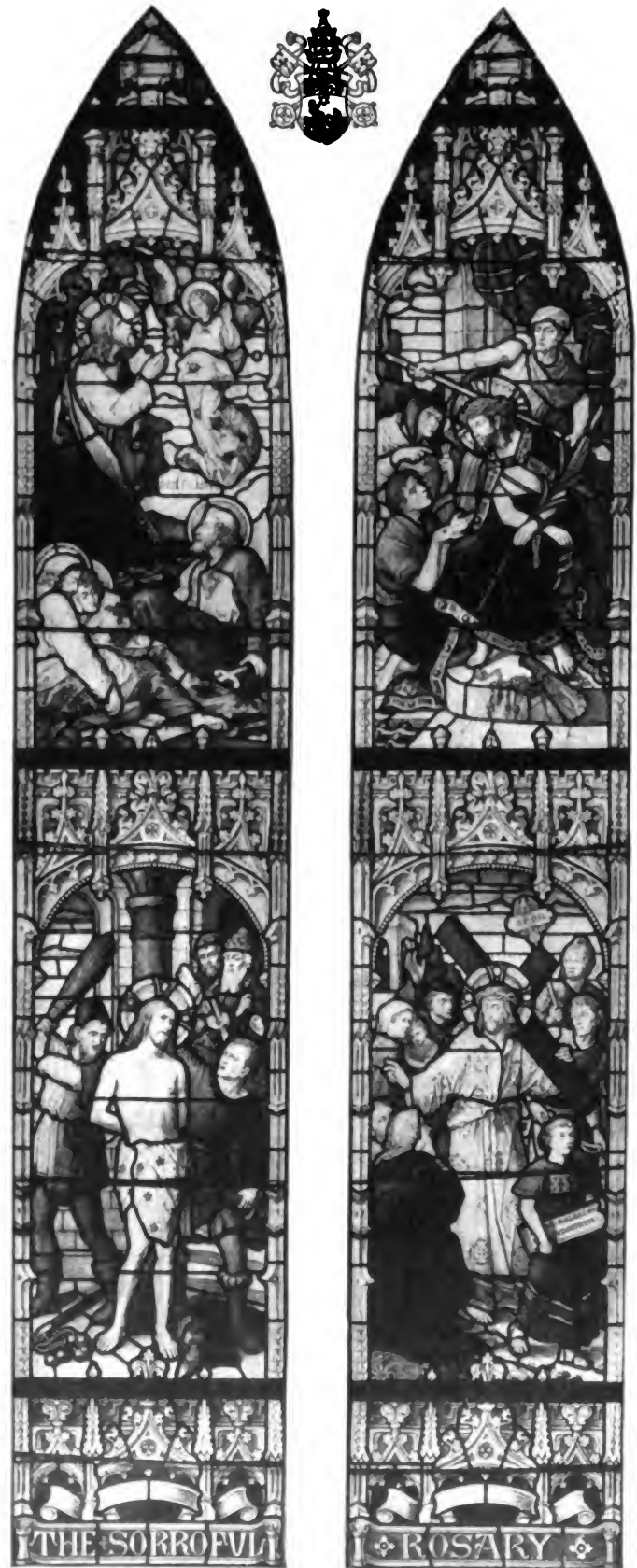
EXECUTED FOR THE VATICAN, ROME, 1908

WORKS OF WILHELM DERIX, GOCH & KEVELAER STUDIOS—Ecclesiastical, Historical, Heraldic, etc.

These Studios installed the windows of the Sistine Chapels in Rome. The windows were presented by the Prince Regent of Bavaria to His Holiness the Pope. Received medals from the Prince Regent and the Pope in acknowledgment of the excellence of this work. The value of such acknowledgment will be appreciated upon consideration of the fact that the Sistine Chapels contain only renowned works of Art, such as Raphael's "Madonna" and many others. In acknowledgment of their meritorious work, as exemplified and shown in their windows, the Wilhelm Dericx, Goch & Kevelaer Studios have received an appointment as "Pontifical Stained Glass Art Studios."

PRICES—These windows can be furnished for from six to fifteen dollars per square foot, duty paid and installed, in any part of the United States. The price will depend on the size of the windows, and subjects selected. We will be glad to submit photos taken from the actual windows, and special designs, upon request, or advise where examples may be seen. All designs and workmanship are beautifully executed and historically and architecturally correct. The best windows made.

"A.B.C." SYSTEMS



INSTALLED AT BATAVIA, N. Y.

SECTION 21

Woodwork (Structural and Joinery)

(Wood Mantels see also Section 41)

Section Synopsis

A. TIMBER AND LUMBER, Lath, Shingles, Veneers, Moldings; Wood-working Machinery and Tools; Turned Work; Flag Poles

B. Wood Columns, Doors, Windows, all styles, and Sash; Outside Shutters; Flooring; Trim; Exterior Finish and Molded Work; Framed-up Cabinet Work, Fixtures, Stairs, Mantels; Machine-carved Room Moldings, Panels, Grille Work, Railings, Balustrades

C. Revolving Doors; Swivel-Action Balance Doors; Telephone Booths; Wood Rolling Doors, Partitions and Shutters; Rolling-door School Wardrobes; Inside Blinds, all kinds; Sundries

D. PARQUET FLOORING; Parquetry; Wood Carpet, Wood-Block Flooring, Steel-woven Flooring; Wood Mosaic, etc.

E. Wall Board, of wood strip, wood pulp, compressed straw, paper, fiber, etc., and similar products; Asbestos Wood for joinery uses

F. Weatherstrips in all Materials; Insect Window Screens and Doors; Screen Hardware; Storm Sash

G. Show-Window Equipment; Display Fixtures; Store Fixtures; Bar Fixtures; Bank and Office Cabinet Fixtures, Partitions, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX REGULAR CLASSIFICATION					
A	1	Flag poles	C	50	Balance-fixture doors, vestibules, booths
	2	Lath, shingles		51	Inside blinds, rolling, sliding
	3	Lumber, all kinds and standard sawing		52	Receding-fixture doors, booths, bathrooms, etc.
	4	Oak lumber and timber		53	Revolving doors, vestibule
	5	Timber, for posts, girders, trusses, shoring, all woods		54	Telephone booths, special doors
	6	Turned work, stairs, grilles, etc.		55	Wood rolling doors, partitions, shutters, vertical, horizontal
	7	Veneers, selected hardwoods		56	Wood rolling-door school wardrobes
	8	Wood-working machinery	D	65	Parquet or parquetry floors, all varieties of wood and design
	9	Yellow pine lumber and timber		66	Steel-woven flooring
B	20	Casements and fanlights, special		67	Wood-block flooring, interlocking
	21	Columns, solid-turned, lock-joint, stave		68	Wood carpet
	22	Exterior wood finish and molded work		69	Wood mosaic
	23	Fireplace mantels, hardwood flooring and ceiling:—	E	80	Asbestos wood, joinery uses
	24	Hardwood, oak, cherry, yellow pine, gum, maple, etc.		81	Wall board:—
	25	Oak, all gradings			Compressed straw, paper, fiber, etc.
	26	Softwood, N. C. pine, spruce, cypress, etc.		82	Wood pulp
	27	Yellow pine, all gradings		83	Wood strip
	28	Hardwood work of every variety, doors, sash, trim, wainscoting, etc.	F	95	Insect screens, window and door:—
	29	Hardwood-veneered doors, sash and general trim and finish			Combination screens and awnings
	30	Inlay work, doors, trim, mantels, etc.		96	Metal
	31	Machine-carved room moldings, picture moldings, cornices		97	Special protective design
	32	Moldings, stock and special		98	Wood
	33	Revolving and balance-sash windows		99	Wood and metal combination
	34	Standard sash and blind mill work in soft and hard woods, doors, windows, shutters, trim, etc.		100	Special screen hardware
	35	Stairs work		101	Storm sash
	36	Wood grilles and fretwork			Weatherstrips:—
	37	Yellow pine siding, trim, base, finishing stock		102	Combination
				103	Felt
				104	Metal
				105	Rubber
			G		
			112	Bar fixtures	
			113	Bank and office cabinet fixtures, partitions, etc.	
			114	Show window equipment and display fixtures	
			115	Store fixtures	
			SPECIAL CLASSIFICATION		
			Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.		
			121	Kitchen dressers, china closets, wood medicine cabinets, consoles, etc. (S. 43 A)	
			122	Wood paving blocks, creosoted (S. 26 C)	
			TRADE NAMES		
			"Acorn Brand," oak flooring		
			"Bluegrass Brand," oak flooring		
			"Carrier Brand," oak flooring		
			"Century Brand," oak flooring		
			"Chickasaw Brand," oak flooring		
			"Diamond Brand," oak flooring		
			"Dixie Brand," oak flooring		
			"Eureka Brand," oak flooring		
			"Forman's Famous Brand," oak flooring		
			"Giltedge Brand," oak flooring		
			"Tosco Brand," oak flooring		
			"Unequaled Brand," oak flooring		
			"Champion," metal weatherstrips, etc.		
			"No Dust," bottom door strip		
			"Cinmanco," metal flyscreens, Catalog F 4		
			"Golden," metal weatherstrips, S. 19 A, Catalog 4		

"J-M," system of linolite concealed electric show-window lighting, S. 42, Catalog 6						Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.
"Korelock," veneered doors } Catalog B 3								1 to 30	31 to 60	61 to 90	91 to 120	121 to 150	
"Paluco," finish, wood work } Catalog B 3													
"Monarch," metal weatherstrips, Catalog F 6													
"Nightingale," wood block flooring, Catalog D 2													
"New Century," wood wire screen } Catalog F 1													
"Primus," all metal wire screen } Catalog F 1													
"Regis," all metal wire screen }													
Cat. No.	Manufacturers having Catalog data in this Section	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150							
F 1	Burrowes Company, The E. T. Portland, Me.				96 98 99 100								
F 4	Cincinnati Fly Screen Co., The Cincinnati, Ohio				96 98 99 100								
B 1	Cream City Sash & Door Co. Milwaukee, Wis.	28	32 34 36										
F 5	Jamestown Window Screen Co. Jamestown, N. Y.				96 98 99 100								
F 6	Monarch Metal Weather Strip Co. St. Louis, Mo.				104								
D 2	Nightingale Company, The New York, N. Y.			67									
B 2	Oak Flooring Mfrs. Assn. Detroit, Mich.	25											
	Bliss-Cook Oak Co. "Dixie Brand" Blissville, Ark.	25											
	Carrier Lumber & Mfg. Co. "Carrier Brand" Sardis, Miss.	25											
	Dwight Lumber Co. Detroit, Mich.	25											
	Farrin Lumber Co., M. B. "Century Brand" Cincinnati, Ohio	25											
	Forman Co., Thomas "Forman's Famous Brand" Detroit, Mich.	25											
	Kenova Poplar Mfg. Co. Kenova, W. Va.	25											
	Louisiana Long Leaf Lumber Co. "Diamond Brand" Fisher, La.	25											
	Memphis Hardwood Flooring Co. "Chickasaw Brand" Memphis, Tenn.	25											
	Nashville Hardwood Flooring Co. "Acorn Brand" Nashville, Tenn.	25											
	New Glasgow Planing Mill Co. "Bluegrass Brand" Glasgow, Ky.	25											
	Rittenhouse & Embree Co. "Giltedge Brand" Chicago, Ill.	25											
	Salt Lick Lumber Co. "Eureka Brand" Salt Lick, Ky.	25											
	Tennessee Oak Flooring Co. "Tofco Brand" Nashville, Tenn.	25											
	Wilce Co., The T. "Unequaled Brand" Chicago, Ill.	25											
B 3	Paine Lumber Co., Ltd. Oshkosh, Wis.	20 21 22 28 29 30	32 34 35 36										
F 2	Phenix Manufacturing Co. Milwaukee, Wis.					95 98 100 101							
C 1	Pitt Balance Door Co., The New York, N. Y.		50 52 54										
F 7	Pitt Balance Door Co., The New York, N. Y.					104							
F 3	Protective Window Screen Co., The Ben Avon, Pa.					97 98 100							
C 2	Wilson Mfg. Co., The J. G. New York, N. Y.		55 56										
D 1	Wood-Mosaic Co. Rochester, N. Y.	4 7 24 25				65 66 68 69							
A 1	Yellow Pine Mfrs.' Assn. St. Louis, Mo.	9 27	37										
	Cincinnati Mfg. Co., The S. 15 A, Cat. 7 (Fly screens, screen doors)												
	Cobb, Jr., Geo. W. S. 43 A, Cat. 4 (Bank and office cabinet fixtures, partitions, etc.)												
	Jackson & Bro., Edwin A. S. 41, Cat. 2 (Wood mantels)												
	Johns-Manville Co., H. W. S. 42, Cat. 6 (Linolite concealed electric show-window lighting) (Asbestos wood for joinery uses)												
	Michigan Engine Valve Co. S. 19 A, Cat. 4 (Metal weather strips)												
	Tiffany Studios S. 15 A, Cat. 3 (Fine cabinet wood-work and trim)												

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
Abbott Mfg. Co. St. Paul, Minn.	28	32 34 35		98 113 115		Baker Co., W. J. Newport, Ky.				96 98 99 100 102 104		Caldwell Mfg. Co. Rochester, N. Y.				100	
Abernethy Folding Shade Co Chicago, Ill.		51				Baker Lumber Co. Turrell, Ark.	3 24					Calmar Mfg. Co. Calmar, Iowa		34			
Acorn Brass Mfg. Co. Aurora, Ill.				102 112 113 115		Baker - Wakefield Cypress Co., Ltd. Plattenville, La.	2 26	32				Carl, John N. New York, N. Y.	30	31 32 34 34			
Acme Metal Weather Strip Co. New York, N. Y.				104		Baltimore Blind Co. Baltimore, Md.			34 51			Carlisle-Ayer Co. Boston, Mass.					
Acme Supply Co. Chicago, Ill.				102 103 104		Barlow Co. Holyoke, Mass.				112 115		Carnahan Mfg. Co. Logansport, Ind.	29				
Adams, J. M. Baltimore, Md.	24		65 66 67 68 69			Batavia & N. Y. Wood Working Co. Batavia, N. Y.	23 28	32 34 35				Carr & Adams Co. Des Moines, Iowa	6 21 23 24 28	31 34 35 36 50 55	65	96 98 104 105 113 115	
Agee Screen Co. Fort Worth, Tex.				97		Beaver Co. Buffalo, N. Y.			81 82			Carr, Ryder & Adams Co. Dubuque, Iowa	6 7 23 24 26 28	31 32 34 35 36 50 54	65	98 113 115	
Ahnapee Veneer & Seating Co. Algoma, Wis.				112 113 115		Bender Co. Hamilton, Ohio	6 21 23 28	34 35				Carter Co., S. C. & S. Keokuk, Iowa	28	34 35		115	
Alexander Co., Geo. Brooklyn, N. Y.	28	32 34 36				Benderscheid Mfg. Co. St. Louis, Mo.				113 115		Chamberlin Metal Weather Strip Co. Detroit, Mich.				104	
Allen Mfg. Co., Ltd. Shreveport, La.		34				Bertelsen Adjustable Grille Co. Chicago, Ill.		36				Champion Metal Weather Strip & Parting Head Co. Boston, Mass.				104	
American Car & Fdy. Co. Wilmington, Del.	28	35				Best Mfg. Co. Peoria, Ill.	28	32 34 35		112 113 115		Chattanooga Screen Co. Chattanooga, Tenn.				98	
American Column Co. Battle Creek, Mich.	21					Bird, Wm. D. New York, N. Y.	28	34 35		113 115		Chicago Lumber & Coal Co. St. Louis, Mo.	2 3 5 24 26				
American Compound Door Co. Chicago, Ill.	7 24 28 29		65 67			Bloom Co., Alfred. Omaha, Neb.	28	34 35		113 115		Chicago Store & Office Fix- ture Co. Chicago, Ill.	28			113 115	
American Creosote Works, Inc. New Orleans, La.	3 5					Bosley Co., D. W. Chicago, Ill.				102 103 104 105		Cincinnati Floor Co. Cincinnati, Ohio	3 24 28				
American Parquetry Floor Co. Philadelphia, Pa.			65			Boynton, John H. New York, N. Y.	24		65 68			Cleveland Hardwood Floor Co. Cleveland, Ohio	24		65		
American Revolving Door Co. Chicago, Ill.		33 53				Boynton & Co. Chicago, Ill.		31 32				Cleveland Store Fixture Co. Cleveland, Ohio	54			112 113 115	
American Sash & Door Co. Kansas City, Mo.	3 5 6 21 23 24 26 28	31 32 34 35 36 51 55	65	98 113 115		Broadbent Mantel Co., P. A. Baltimore, Md.	23					Cleveland Wire Spring Co. Cleveland, Ohio				115	
American Screen Co. Brookline, Mass.				99		Brockway - Smith Corpora- tion Boston, Mass.	2 6 20 21 23 26 28	31 32 34 35 53				Cleveland Woodwork Floor Co. Cleveland, Ohio	24		65		
American Weather Strip Co. Grand Rapids, Mich.				102		Brownell, C. H. Peru, Ind.				113		Cole Mfg. Co. Memphis, Tenn.	3 6 7 21 28	32 33 34 35 36 50 51 53 54 55			
Anderson Co., William G. Boston, Mass.				96 102 103 105		Bromwell Brush & Wire Goods Co. Greensburg, Ind.				96		Colonial Column Mfg. Co. New York, N. Y.	21				
Andrews Co., A. H. Chicago, Ill.	28	32 34 35		113 115		Bryan Show Case Co. Bryan, Ohio				113 114 115		Colonial Wall Board & Plas- ter Co. Pittsburgh, Pa.			81 82 83		
Anson-Gilkey & Hurd Co. Merrill, Wis.		34				Buckeye Churn Co. Sidney, Ohio	2 3 5 6 8 21 23 24 26 28	34 35 36				Columbia Lumber & Mfg. Co. Columbia, S. C.	21 28	32 34 35	113 115		
Arpin Lumber Co., John. Grand Rapids, Wis.	2 3 5 23 24 26					Budde-Lindsay Mfg. Co. Jackson, Tenn.				113		Columbia Mantel Co. Louisville, Ky.	23				
Ashland Lumber Co. Ashland, Ky.	2 3 5 6 24 26	34 35				Buffalo Grille Co. Buffalo, N. Y.		36				Columbus Corner Post Co. Columbus, Ohio				115	
Ashison Revolving Door Co. Independence, Kan.	28	34 53				Buffalo Mantel Mfg. Co. Buffalo, N. Y.	23					Commercial Shingle Co. Bellingham, Wash.	2				
Ahey Sanitary Equipment Co. Chicago, Ill.				102 103 104		Buffington, I. T. Elizabethville, Pa.	2 3 28	34 112 113 115				Compound Door Co. St. Joseph, Mich.	29				
Akin Co., C. B. Knoxville, Tenn.	23					Burlington Venetian Blind Co. Burlington, Vt.		51		98		Continental Co. Detroit, Mich.	34		98		
As Lumber & Shingle Co. Battle, Wash.	2 3 5 26					Burrill Co., A. W. Bridgeport, Conn.	3 28	34 35									
As Showcase Co. Boston, Mass.				114 115		Burton Co., William H. Albany, N. Y.	28	34 35		113 115							
As-Lock Plug Co., Inc. New York, N. Y.	51					Bush Bros. Royersville, Pa.	28										
						Bush, James S. New York, N. Y.				113 115							
						Buttle Parquet Floor Co. New York, N. Y.			65 68								

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Curtiss Bros. & Co. Clinton, Iowa	6 7 20 21 23 24 28	32 34 35 36		98 112 113 115		Ferguson Lumber Co. Little Rock, Ark.	2 3 5 24					Hasbrouck Flooring Co. New York, N. Y.			65 67 68		
Curtis Sash & Door Co. Sioux City, Iowa	6 21 23 28	32 34 35 36		98 112 113 115		Fishach & Co., David. Baltimore, Md.	23		65			Herrmann Lumber Co., H. ... New York, N. Y.	3 6 7 24 25 28	36		112 113 114	
Curtis, Towle & Paine Co. ... Lincoln, Neb.	6 21 24 28	33 34 35 36		98 112 113 115		Fitzgerald-Speer Co. Pen Argyl, Pa.	21 28	32 34 35		113 115		Heaton & Wood. Philadelphia, Pa.	24	36	65 66 67 68 69	104 105	
Dallas Show Case Mfg. Co. ... Dallas, Tex.	23 28	32 35 54		113 115		Flint Co., George C. New York, N. Y.	23 28					Hegener Co., Rudolph. Chicago, Ill.	21				
Dallas Screen Co. Dallas, Tex.				96 98 99		Ford Mfg. Co. Holyoke, Mass.				102		Heppes Co. Chicago, Ill.			80 82		
Dame Mantel Co. Harriman, Tenn.	23					Forman Co., Thomas. Detroit, Mich.	23 24 26		65			Herdman Sash, Door & Lumber Co. Zanesville, Ohio	23 28	32 34 35		113 115	
Dawson Brothers. Chicago, Ill.	23					Freeman Mfg. Co., Charles A. Boston, Mass.				96 98 104		Herr Floor Co., John. St. Louis, Mo.			65 66 67 68 69		
De Long & Co., A. W. Long Island City, N. Y.	28	34				Fridman Seating Co. New Richmond, Ohio	6			113 115		Hess & Co., D. S. New York, N. Y.	23 28	31 32 35 36	65 68	112 113 115	
Dennis & Co., W. J. Chicago, Ill.		32		100 102		Fringe, Martin. Philadelphia, Pa.	24	36	65			Higgin Mfg. Co. Newport, Ky.				96 98 104	
Des Moines Cabinet Co. Des Moines, Iowa	6 28	34 35 36 54		113 115		Fritz & Larne. Philadelphia, Pa.	24	36	67 68			Himmelberger-Harrison Lumber Co. Cape Girardeau, Mo.	24				
Diamond Veneer Co. Edinburgh, Ind.	7					Fuller & Rise Lumber & Mfg. Co. Grand Rapids, Mich.	2 3 5 24 26 28	31 32 34 35		98		Hipolite Screen & Sash Co. ... Los Angeles, Cal.		33		98	
Dibert, Stark & Brown Cy- press Co., Ltd. Donner, La.	2 3 24 26	32				Gall Co., Albert. Indianapolis, Ind.	23 28	36	65	113 114 115		Hoffman Bros. Co. Fort Wayne, Ind.	3 7 24				
Dickerson & Baker Lumber Co. Birmingham, Ala.	2 3 24					Gauger & Co., John A. Chicago, Ill.	21 23 28	31 34 36	65 68			Hoops & Co., William H. Chicago, Ill.	23				
Dickey & Co., A. Boston, Mass.	6 21	35				Georgia Show Case Co. Columbus, Ga.	28	50 56		113 114 115		Huck Mfg. Co. Quincy, Ill.				113 115	
Dishrow & Co., M. A. Lyons, Iowa	6 21 23 28	32 33 34 35 36	83	96 98 99 113		Glaser, Rohrer & Co. New York, N. Y.				113 115		Huebner Mfg. Co. Detroit, Mich.	28	32 34 35			
Doane & Jones Lumber Co. ... Elmira, N. Y.	2 3 6 21 24 26	32				Goodrow Moulding Co., Wm. Chicago, Ill.		32				Hyde-Murphy Co. Ridgway, Pa.	6 28 30	34 36		98 113 115	
Dodge & Co., H. B. Chicago, Ill.		51 55				Gould Mfg. Co. Oshkosh, Wis.	21 28	32 33 34 35				Illinois Show Case Works ... Chicago, Ill.				114 115	
Duluth Log Co. Duluth, Minn.	1 2 3 24 26					Grand Rapids Hand Screw Co. Grand Rapids, Mich.	28					Indiana Lumber & Mfg. Co. ... South Bend, Ind.	1 6 7 23 28	32 34 35		113 115	
Dutch & Co., A., Inc. Buffalo, N. Y.				113 115		Grand Rapids Moulding Co. ... Grand Rapids, Mich.		31 32				Indianapolis Bank & Store Fixture Co. Indianapolis, Ind.				113 115	
Dyer Revolving Door Co. ... New York, N. Y.		53				Grand Rapids Show Case Co. Grand Rapids, Mich.				112 113 114 115		Indiana Veneer & Panel Co. ... New Albany, Ind.				112 113 114 115	
Eaglesfield-Stewart Co. Indianapolis, Ind.			65 67 68 69			Grand Rapids Screen Co. Grand Rapids, Mich.				98 99 104		Inlaid Floor Co. San Francisco, Cal.		36 48	68 69	102	
Eastman Floor Co., S. L. ... Saginaw, Mich.	24					Grant Pulley & Hardware Co. New York, N. Y.		51 55 56				Interior Finish Co. N. S. Pittsburgh, Pa.	6 21 24 28	31 32 33 34 54		112 115	
Eatonville Lumber Co. Eatonville, Wash.	2 3 5 24 26	32				Hainer Mfg. Co. St. Louis, Mo.	2 6 21	32 34 35				Interior Hardwood Co. Indianapolis, Ind.	24		65 67 68 69		
Edgefield & Nashville Mfg. Co. Nashville, Tenn.	28 30			112 113 115		Hall, Fessenden. Philadelphia, Pa.	7					Introstyle & Novelty Co. ... Marietta, Ohio				104	
Ehrlich & Sons, H. St. Joseph, Mo.		54		113 115		Hamilton Lumber Co. Hamilton, N. Y.	2 3 5 21 26	32 34				Ironton Wood Mantel Co. Ironton, Ohio	23				
Farley & Loetscher Mfg. Co. ... Dubuque, Iowa	6 23 24 28	31 34 36 51	65	102 103 104 105 115		Hand's Sons, W. H. New York, N. Y.	23 24 26 28	31 32 34 55		98 113 114 115		Jamestown Mantel Co. Falconer, N. Y.	2 6 23 24 26 28		65	113	
Farrin-Korn Lumber Co. Cincinnati, Ohio	23 24 25 28	32	65			Hanson Ward Veneer Co. ... Bay City, Mich.	29					Jeanerette Lumber & Shin- gle Co., Ltd. Jeanerette, La.	2 21 26	34 35 36			
Farrin Lumber Co., M. B. Cincinnati, Ohio	23 24 25		65			Hardware Products Co. Neenah, Wis.	28 29					Johannesen Mfg. Co. Erie, Pa.				113 115	
						Harris & Cole Bros. Cedar Falls, Iowa	6 21	32 35									
						Harsha Mfg. Co., L. R. Chicago, Ill.	6 7	31 32 36									
						Hartmann-Sanders Co. Chicago, Ill.	21										

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
Kane Blind & Screen Co..... Kane, Pa.		51		98		Mathews Bros. Mfg. Co..... Milwaukee, Wis.	28			113		New Glasgow Planing Mill Co. Glasgow, Ky.	3 24 28	32 35	65 67		
Keener Co., S. N..... Newark, N. Y.	3 5 6 28	34 36		98 112 115		Malchior Co., Edward..... Chicago, Ill.		54		113 115		New Jersey Blind Co..... Paterson, N. J.		51		98	
Kerry & Hanson Flooring Co. Grayling, Mich.	23 24					Menke-Grimm Planing Mill Co. Quincy, Ill.	6 28	34 35		98		N. Y. Carved Moulding Co.. New York, N. Y.		31 32 36			
Kertscher & Co..... Elmira, N. Y.	6 7 20 21 23 28	31 32 34 35 36 50	65			Mershon & Co., William B.. Saginaw, Mich.	7					Niagara Wood Working Co.. New York, N. Y.	28	34 36			
Kinnear Mfg. Co..... Columbus, Ohio		55				Mershon Lumber Co., John D. New York, N. Y.	2 3 22 24 29	32 34 35				Nickerson Mfg. Co..... Knoxville, Tenn.	21 22				
Kleeman & Co., Wm..... New York, N. Y.	28	54 55	65 80	112 113 115		Mertz Sons, George..... Port Chester, N. Y.	6 24	31 32 34 35 36 37				Noiseless & Draughtless Door & Window Cushion Co.. New York, N. Y.				104	
Kloak Bros. & Co..... Cincinnati, Ohio				112 113 115		Metallic Screen Co..... Collins, Wis.				96		Norcross Brothers Co..... Worcester, Mass.	6 7 28 30				
Knittel Show Case Co., Jos.. Quincy, Ill.		54		113 115		Myers Mfg. Co., Fred J..... Hamilton, Ohio	1	34 35		112 113		Northwestern Compo. Board Co. Minneapolis, Minn.			83		
Knoxville Furniture Co..... Knoxville, Tenn.	23					Michigan Wire Cloth Co.... Detroit, Mich.				96		Northwestern Cooperage & Lumber Co. Gladstone, Mich.	7 24 28				
Koch & Son, G. W..... New York, N. Y.			65			Miller Store Fixture Co..... St. Louis, Mo.				114 115		Northwestern Furniture Co.. Milwaukee, Wis.				112 115	
Koll Planing Mill Co., A. J.. Los Angeles, Cal.	1 5 6 21	31 32 35				Milliken Co., John P..... Brooklyn, N. Y.				96 98		Northwestern Parquet Floor Co. Minneapolis, Minn.			65 68 69		
Kurtz Brothers..... Bethlehem, Pa.	28			112 113 115		Milliken-Kellam Co..... Newton, N. J.	5 23 28	34 35 36		96 98 99 104 113 115		Noyes Co., W. H..... Newark, N. J.	1				
Lakow, Samuel..... New York, N. Y.	28					Moline Furniture Works.... Moline, Ill.				113 114 115		Ohmer's Sons Co., M..... Dayton, Ohio	13 15				
Lamb-Fish Lumber Co..... Charleston, Miss.	3					Monroe Screen, Blind & Part- ition Co. Lima, Ohio		55 56				Oil City Wood Working Mfg. Co. Reno, Pa.	28 29	34 35			
Lestershire Lumber & Box Co. Lestershire, N. Y.	2 3 24 26	35		112 113 114 115		Moore & Co., E. B..... Chicago, Ill.	24	36	65 68			Osgood & Blodgett Mfg. Co.. St. Paul, Minn.	21 23 28	32 34 35	65	98 113 115	
Linehan Lumber Co..... Pittsburgh, Pa.	3 4 24					Moorman & Co..... St. Paul, Minn.				112 113 115		Ostendorf, W. H..... Philadelphia, Pa.	23	36	65	98 104	
Lobdell & Churchill Mfg. Co.. Onaway, Mich.	2 3 24 26					Morgan Co..... Oshkosh, Wis.	6 28 29 30	32 35 36				Palen's Sons Co., H. W..... Kingston, N. Y.	2 3 5 21 22 24 28	34 35	65	113 115	
Lord Lumber Co..... La Grange, Ill.	3	32				Moss Mfg. Co., R. L..... Athens, Ga.	2 5 6 21 23 24 28	32 34 35 36				Paragon Metal Weather Strip, Co. New York, N. Y.				104	
Lorenzen & Co., Charles F.. Chicago, Ill.	23	36				Motley, Peter..... Philadelphia, Pa.				96 98 104 105		Peace Metal Weather Strip Co. Niagara Falls, N. Y.				102 104	
Louisiana Red Cypress Co.. New Orleans, La.	30	32 34 35				Munson & Johnson..... Jamestown, N. Y.	23					Peckham, Wolf & Co..... Schenectady, N. Y.	30	34 35			
Louisville Planing Mill & Hardwood Flooring Co.. Louisville, Ky.	7 21 24 28	31 32 33 34 35	65 67	112 113 115		Murray & Hill Co..... New York, N. Y.	20 28	32				Perkins Mfg. Co..... Augusta, Ga.	2 3 6 21 23 28	31 32 34 35 36		96 98 99	
Luehrmann Hardwood Lum- ber Co., Chas. F.. St. Louis, Mo.	3 6 24					Muskegon Cabinet Co..... Muskegon, Mich.	28			113 115		Petersen, Co., George L..... Chicago, Ill.	23			113 115	
Lutke Mfg. Co..... Portland, Ore.				112 113 115		Nalle & Co..... Austin, Tex.	2 3 6 21 23 28	32 34 35 36				Phillips Co., A. J..... Fenton, Mich.				98 99	
Lyons & Co., Hugh..... Lansing, Mich.				114 115		Nashville Hardwood Floor- ing Co. Nashville, Tenn.	23 24		65 67			Phoenix Furniture Co..... Eau Claire, Wis.				112 113 115	
McConnell Mfg. Co..... Hornell, N. Y.	5 20 28	32 34 35				National Lumber Co..... McKeesport, Pa.	3 24 26					Phoenix Sliding Blind Co.... Phoenix, N. Y.	28	51		113 115	
Mack Iron & Wire Works.... Sandusky, Ohio		34 35		96	133	National Metal Weather Strip Co. Pittsburg, Pa.				104		Pinches Co., John..... New Britain, Conn.	6 24 28	35		112 113 115	
Mailander Co..... Waco, Tex.				113 115		National Sash & Door Co.... New Orleans, La.	21 23	31 32 34 35 51 53 54 55				Pinkham Lumber Co., J. E.. Seattle, Wash.	2 3 4 21 26				
Maine Screen & Ventilator Co. Fairfield, Me.				98		National Supply & Mfg. Co.. St. Louis, Mo.				98 104		Pope, Charles A..... New York, N. Y.			65 68		
Maley, Thompson & Moffett Co. Cincinnati, Ohio	3 7 24					Nelson Co., C. T..... Columbus, Ohio	6 21	32 35				Porter Screen Co..... Burlington, Vt.				98	
Massee & Felton Lumber Co.. Macon, Ga.	28 29					Newark Mantel & Furniture Co. Newark, N. J.	23 28			113 115		Pottier & Stymus Co..... New York, N. Y.	28			113	

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Rainier Lumber & Shingle Co Seattle, Wash.	2 3 5 21	32 34				Schulkins & Co..... Detroit, Mich.			65 67 68 69			Tilghman & Sons, N. J..... Palatka, Fla. Toledo Screen Co..... Toledo, Ohio Tolson Lumber & Mfg. Co... New Bern, N. C.	2 1 2 3 5 6 23 24 28				96 98 113 115
Reinle-Salmon Co..... Baltimore, Md.				114 115		Schumacher Co., F. E..... Hartville, Ohio				98 99 100		Trebing Mfg. Co..... Cleveland, Ohio	6 28	32 34			
Requarth Co., F. A..... Dayton, Ohio	6 24 26 28	51				Schwager & Nettleton, Inc.. Seattle, Wash.	1 2 3 5 6 21					Trexler Lumber Co..... Allentown, Pa.	2 3 9				
Richardson & Hoene Co..... Tacoma, Wash.	2 3 21	32 34 35		98 113 115		Schwarzwaelder, Wm. O.... Chichester, N. Y.	28			113 115		Union Blind & Ladder Co. Inc. Oakland, Cal. Union Show Case Co..... Chicago, Ill.			51 55		97 113 115
Rieser & Co., Ely J..... New York, N. Y.	28	34 36 34 54 55		112 113 115		Schweizer & West Mfg. Co... Chicago, Ill.	7 28 29			113 115		United Revolving Door Co.. New York, N. Y. Upson Co..... Lockport, N. Y. Van Kannel Revolving Door Co. New York, N. Y. Vanleer Bros..... Brookville, Pa.			53 53		
Rittenhouse Brothers..... Cadiz, Ohio	6 21					Schwerd Mfg. Co., A. F..... Pittsburgh, Pa.	21					Voss Mantel Co..... Louisville, Ky. Waccamaw Lumber Co..... Bolton, N. C.				65	98 113 115
Roach & Musser..... Muscatine, Iowa	21 29	32 34 35				Segale Mfg. Co..... Columbus, Ohio				112 113 115		Wade Mfg. Co., H. M..... Charlotte, N. C.	28	35			112 113 115
Robbins Mfg. Co..... Chicago, Ill.		34		95 96 98 102 103 104 105		Segelke & Kohlhaus Mfg. Co. La Crosse, Wis.	1 6 21 23 24 28	32 34 35 36 51				Walker Bin Co..... Penn Yan, N. Y. Ward Bros..... Big Rapids, Mich. Warren Woodworking Co.. Belvidere, N. J. Washington Mfg. Co..... Tacoma, Wash. Watson Mfg. Co..... Jamestown, N. Y. Weary & Alfred..... Chicago, Ill. Week Lumber Co., John.... Stevens Point, Wis.					
Roberts Co., U. N..... Davenport, Iowa	2 3 5 6 21 23 24	32 34 35 36	67 81	98 100		Sherwood Metal Working Co. Syracuse, N. Y.				96		Western Sash & Door Co.... Kansas City, Mo.	6 7 21 23 28	32 33 34 35 36			98 113 115
Robertson & Son, A..... Binghamton, N. Y.	2 3 6 21 26	32 34				Simonson Bros. Mfg. Co..... Minneapolis, Minn.	24 25	34 35				West Michigan Flooring Co.. Manistee, Mich. Weybrecht's Sons, J. T..... Alliance, Ohio	23 24 23 28 6 21				98 98 113
Rochester Show Case Works. Rochester, N. Y.				113 115		Sjostrom Co., John E., Inc... Philadelphia, Pa.	23 24 28	32 34 54		112 113 115		Wheeler, Osgood Co..... Tacoma, Wash.	3 6 21 28	32 34 36 50 53 54			
Rock Island Sash & Door Works Rock Island, Ill.	28	34				Smith & Rumery Co..... Portland, Me.	28	32 35		113 115		Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	2 3 5 26 3 6 21 28				98 113 115
Rockwell Mfg. Co..... Milwaukee, Wis.	6 21 24 28	32 34 35 36 51		113 115		Solmsen Fly Screen Co., M.. Baltimore, Md.				98 104		Weyerhaeuser Lumber Co.. Everett, Wash.	2 3 5 26				
Roddis Lumber & Veneer Co. Marshfield, Wis.	2 3 7 29					Southern Cypress Mfg. Assn. New Orleans, La.	26					Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			98 113 115
Roebuck Weather Strip & Wire Screen Co. Brooklyn, N. Y.		34		96 102		Spangler Co., Frank..... Toledo, Ohio	3 5 6 21 24 26					Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	2 3 5 26 3 6 21 28				
Rollaway Screen Co..... Boston, Mass.				96 98		Standard Screen Co..... Chicago, Ill.				97		Weyerhaeuser Lumber Co.. Everett, Wash.	2 3 5 26				
Roper Lumber Co., John L. Norfolk, Va.	2 26					St. Croix Lumber Co..... St. Paul, Minn.	2 3 5 24	32 34				Wheeler, Osgood Co..... Tacoma, Wash.	3 6 21 28	32 34 36 50 53 54			113 115
Rosenberg, S..... Newark, N. J.		32 36				Stearns Lumber Co., A. T. .. Boston, Mass.	2 3 5 6 21 24 28	32 34 35				Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			
Ruse & Thompson..... Baltimore, Md.				113 114 115		Steul & Thuman Co..... Buffalo, N. Y.	23					Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	1 6 7 21 24 28	31 32 34 35 36	65	98 112 113 115	
Rutter, C. S..... Philadelphia, Pa.				104		St. Louis Bank Fixture Co.. St. Louis, Mo.				112 113 115		Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			
Saco Mfg. Co..... Saco, Me.	21					St. Louis Sash & Door Work St. Louis, Mo.	6 21 23 28	31 32 34 35 36 50 51 55	65 68 69	113 115		Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			
Sayre-Newton Lumber Co.. Denver, Colo.	1 2 3 5 6 21 24 26 28	32 34 35 36	82	98 103		Strack Co., Alfred..... Louisville, Ky.	28 29 30	34 35		113 114 115		Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			
Schaeffler, F..... New York, N. Y.	28			113 115		Strahlmiller Mantel Works. W. F. Buffalo, N. Y.	6 23 24			113 114 115		Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			
Schaller-Hoerr Co..... Chicago, Ill.	6 21 23 24 28	32 34 35 36	63 68	98 103		Tabor Sash Fixture Co. Newark, N. J. Tacoma Mill Co. San Francisco, Cal.	2 3 5			65 68		Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			
Schick-Johnson Company .. Chicago, Ill.	28 29 30			113 115		Terwilliger Mfg. Co..... New York, N. Y.				65 68		Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			
Schnute-Boltman Co..... Evansville, Ind.	21 28	32 34		98 115		Tennessee Mantel Mfg. Co.. Knoxville, Tenn. Thiawall & Co., C. F. Cincinnati, Ohio Thompson & Co., Lewis.. Philadelphia, Pa.	23 23 7					Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			
Schroeder Lumber Co., John Milwaukee, Wis.	1 2 3	34 36				Todd & Markthalder..... New York, N. Y.	28			113 115		Wheeler Screen Co..... Geneva, Ill. Wihe Co., T..... Chicago, Ill. Wiley, C. L..... Chicago, Ill. Williams & Hunting Co..... Cedar Rapids, Iowa	6 7 21 23 28	32 33 34 35 36			

Yellow Pine Manufacturers' Association

Yellow Pine Lumber, Flooring, Siding, Etc.,
and Creosoted Paving Blocks

WRIGHT BUILDING
ST. LOUIS, MO.

Geo. K. Smith, Secretary, Suite 707

The **Yellow Pine Manufacturers' Association** is an organization composed of Yellow Pine Lumber Manufacturers for the purpose of unifying grades, sizes and manufacture; for general trade extension through high-class methods of publicity; for distribution of lumber and trade literature.

The members of the Association manufacture rough and dressed Southern Yellow Pine lumber and finished products, and market their material through lumber dealers, planing mills and building supply firms.

PRODUCTS—The Dressed Yellow Pine Products are: FINISHING, FLOORING (Heavy Factory, Edge-Grain, Flat-Sawn), CEILING, PARTITION; MOLDED CASING AND BASE, WINDOW AND DOOR JAMBS; DROP SIDING, BEVEL SIDING, BOARDS, SHIPLAP AND BARN SIDING; GROOVED ROOFING; FENCING; DIMENSION; HEAVY JOISTS AND TIMBERS, etc.

The Rough Yellow Pine Products are: FINISH BOARDS, FENCING, DIMENSION, POSTS, TIMBERS, LATH, etc.

(Write for "Standard Grading and Dressing Rules.")

TECHNICAL DESCRIPTION—Four important varieties of Yellow Pine trees grow in the southern states. They are usually grouped as one in the lumber market and are sold under the common name, "**Southern Yellow Pine**," namely **Long Leaf**, **Cuban**, **Short Leaf** and **Loblolly**. These pines are similar in appearance, one of the chief distinctions being the *relative proportions of sap wood and heart wood* revealed in their cross sections; the former being yellowish-white in color, the latter reddish-brown and very hard, close-grained and more resinous.

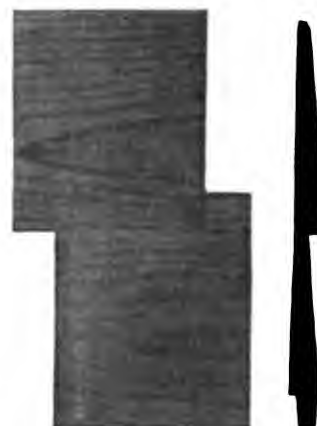
Loblolly Yellow Pine has the most sap wood, **Short Leaf** less, and **Long Leaf** and **Cuban** the least amount of sap wood. Southern Yellow Pine lumber is usually artificially dried at the place of manufacture by the use of modern dry-kiln equipment under conditions that prevent the cracking or checking of the lumber. **Long Leaf** is the predominating species of standing pine timber in the South to-day.

PHYSICAL PROPERTIES—Southern Yellow Pine has been more thoroughly investigated as to its physical properties than any other wood. Bulletin No. 99, on "Pines," October, 1911, Forest Service, states that "it is hard, dense, very strong, flexible, straight and even in the grain; a good sound timber of a nature free from defects." The annular rings are strongly marked, and the natural resinous filler insures less shrinkage, great durability, strength and natural wood preservation. The **Extraordinary Physical Characteristics** of this wood make it the **Standard Wood for Heavy Construction**.

STRUCTURAL MATERIAL—Southern Yellow Pine is generally acknowledged by timber experts, conservative architects, engineers and contractors to be the "Best Timber" for heavy engineering structures where **great strength, long span and durability** are required. Also specified in large amount for piling construction *under ground or under water*, for bridge timbers, coal shipping piers, colliery bulkheads, barge construction, etc.

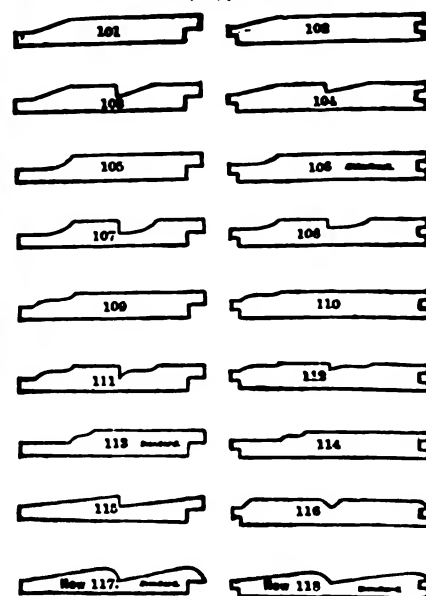
It stands excessive strains or shocks without giving away suddenly—i. e., it will give sufficient indication before arriving at its ultimate breaking point—in other words, it **does not collapse**. (Yellow Pine Manual of "Standard Wood Construction.")

PATTERNS OF YELLOW PINE DROP SIDING



BUNGALOW BEVELED SIDING

WORKED SHIPLAP— $\frac{3}{4}$ x $5\frac{1}{2}$ over all; allow $\frac{1}{2}$ inch for Lap.
WORKED TONGUE AND GROOVE— $\frac{3}{4}$ x $5\frac{1}{2}$ over all; $5\frac{1}{4}$ in. face.



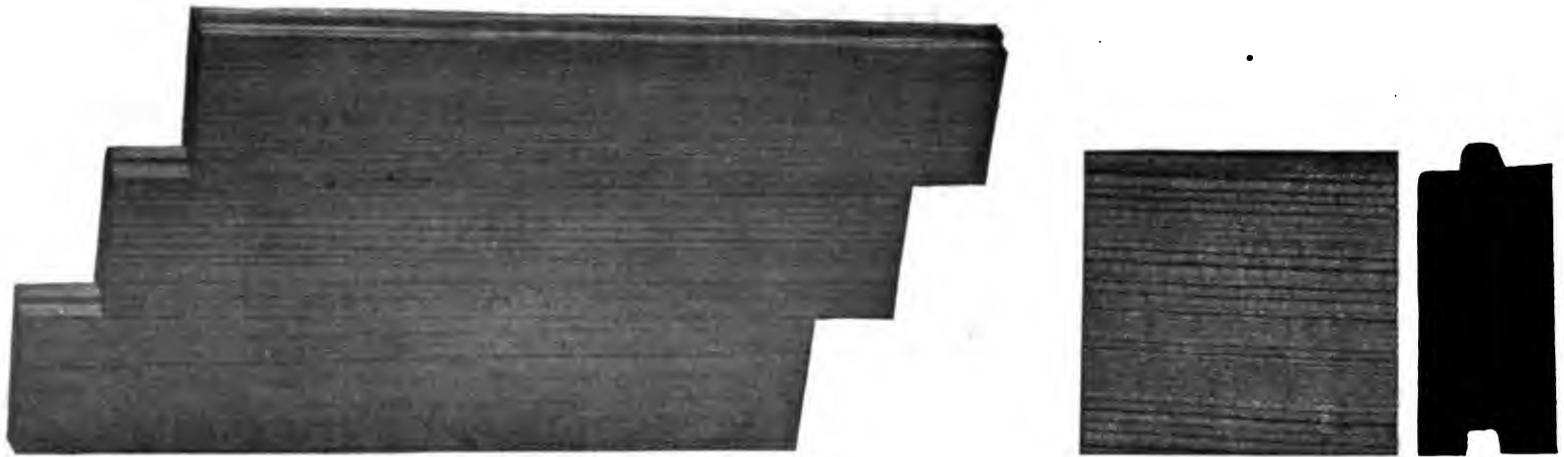
ORDERS FOR STOCK SHOULD CONFORM TO ABOVE NUMBERS

FIRE-RESISTING—The fire-resisting qualifications of Southern Yellow Pine timber, on account of its dense, hard, fibrous growth, make it excel other suitable wood and structural materials in this particular. It is an almost impossible matter under very intense and continued heat to make useless, or destroy 10" or 12" Yellow-Pine posts or girders by fire; the outside surface will char, but the inner portion of the timber remains intact, its strength preserved, and the sticks stay in place holding up the walls and preserving the structure.

VALUABLE MATERIAL FOR ALL BUILDING PURPOSES—The Wood of a Thousand Uses. "One hundred years ago it was claimed that 75% of the lumber in residences in the Southern Yellow Pine region was of this wood." (Chesapeake Bay to Texas.) In most cases the entire house, so far as it was made of wood, was of this material; also barns, sheds and stables and all farm buildings drew enormous supplies from long-leaf pine forests. Picket posts and planks for garden and yard fences were sawed from the wood.

HEAVY FACTORY FLOORING—This is manufactured in different thicknesses with tongue-and-groove joints or grooved for splines. Write for our **Standard Grading and Dressing Rules** giving full description and cuts. Hundreds of thousands of feet of this material is used for factory and warehouse floors.

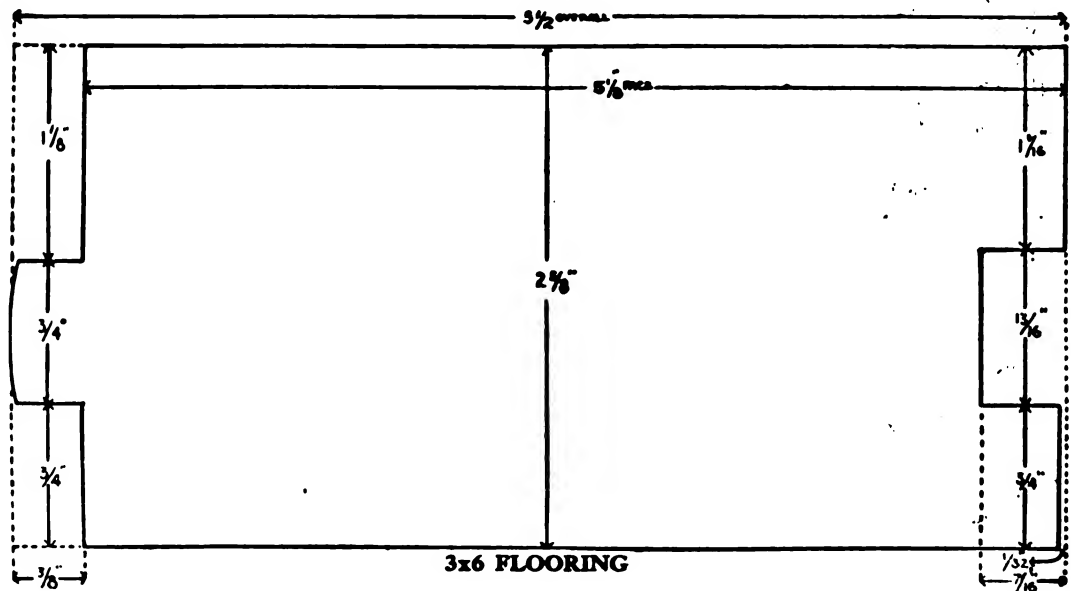
EDGE-GRAIN FLOORING—A most desirable flooring for all high-class floors in hall, living and dining rooms, kitchen and chambers, where artistic appearance, good wearing qualities, cleanliness and sanitation are floor necessities. Equally desirable for FLOORS OF LARGE AREA where strength, good service, smoothness and staying qualities are absolute requirements. It **does not sliver, buckle or curl**.

EDGE-GRAIN FLOORING—STANDARD SIZES $2\frac{1}{4}$ " AND $3\frac{1}{4}$ " FACE BY $1\frac{3}{16}$ "

FLAT-SAWED FLOORING—Very desirable for rooms to be carpeted and for all other floor locations not often subjected to great moisture. It is less durable than Edge-Grain, but will give excellent floor service for years, and is marketed at a lower price than edge-grain.

INTERIOR FINISH—Meets all the requirements of expensive hardwood—splendid appearance, hardness, durability. By its use very artistic interiors are secured, owing to its beautiful varying grain and adaptability to any method of finishing; a natural color with varnish finish or stained to match any furniture; readily receives and holds varnish, and can be rubbed to a high polish, the same as hardwood. It does this at considerably less cost.

(Standard Molding Book and Finishing Specifications.)



YELLOW PINE STOCK DOORS—The stock doors are manufactured and sold in solid or veneer by sash and door manufacturing plants throughout the United States. We do not make the doors, but will gladly furnish full information.

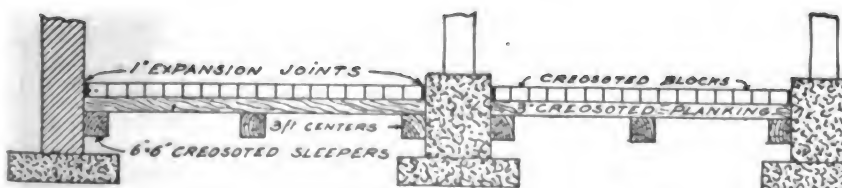
GENERAL ADVANTAGES AND AVAILABILITY OF YELLOW PINE—Extremely durable, it stays "put" when lumber is used dry, easily repaired, and holds nails well. Endures much exposure under water and under ground.

Most available of all building woods; 2,000 saw mills run every working day in the year, placing upon the market enormous quantities of Yellow Pine lumber for every building purpose. Keen competition among manufacturers for market results in a reasonably low price to the consumer. Cost less than other woods adapted for same purposes.

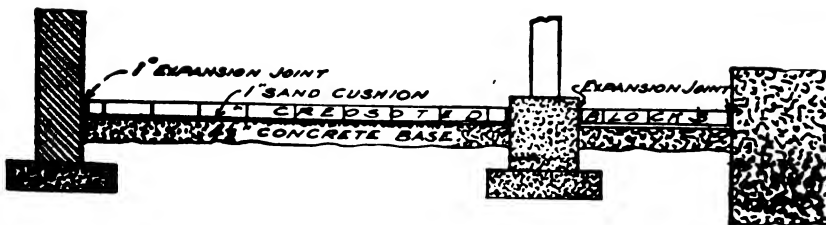
YELLOW PINE CREOSOTED BLOCKS—Are being specified by architects and engineers for floor coverings in any location where heavy trucking, dumping or heavy machinery is to be installed, either under cover or out of doors. Durable, Noiseless, Free from Dust, Sanitary; not injured by oils or acids; do not grind away or rot out; easily cleaned, and floors may be changed at will. (Send for literature.)

INFORMATION BUREAU—Architects, Engineers and Contractors are requested to send for any literature or information. We maintain a Bureau for this purpose. Address the Secretary, Geo. K. Smith, Suite 707 Wright Bldg., St. Louis, Mo.

SHOP FLOOR OF CREOSOTED YELLOW PINE BLOCKS



FLOOR WITH CREOSOTED PLANK BASE



FLOOR WITH CONCRETE BASE

"A.B.C." SYSTEMS

Cream City Sash & Door Co.

Wholesale Builders of Standard Architectural Woodwork

Branches
NEW YORK, N. Y.
BUFFALO, N. Y.

MILWAUKEE, WIS.

Branches
CHICAGO, ILL.
BOSTON, MASS.

STOCK VENEER
DOOR DESIGNS



NO. 545



NO. 549



NO. 551

"A.E.C." SYSTEMS

PRODUCTS—ARCHITECTURAL WOODWORK: TRIM, DOORS, WINDOW FRAMES AND SASH of Every Description.

DESCRIPTION—We are wholesale manufacturers and distributors of all kinds of Woodwork, Sash, etc., in standard sizes and designs. Special sizes and designs we make quickly according to plans and specifications submitted. We handle all the various woods in standard stock sizes.

FRAMES—We carry a large stock of all kinds of frame lumber and can get out frame orders quickly. We are especially equipped to furnish large bills of special frames for office buildings, hotels, schools, hospitals, factories, etc., and can guarantee prompt delivery of all orders.

SASH AND WINDOWS—In this department we have the very latest improved machinery for manufacturing special sash and windows in large quantities, so that all special orders may be immediately filled.

DOORS—We are large manufacturers of pine, yellow pine, cypress, fir and other soft wood doors both in stock and special sizes and designs.

INTERIOR WOODWORK—It is in our fine interior woodwork that we take particular pride. We employ German mechanics whose reputation as superior woodworkers is worldwide. We make a specialty of interior finish for the larger class of construction, such as office buildings, hotels, schools, hospitals, etc.

VENEER DOORS—We manufacture veneer doors in all the expensive and less expensive woods: birch, plain red and white oak, quarter-sawn red and white oak, walnut, cherry, mahogany of all kinds, etc.

ESTIMATING SERVICE—For the accommodation of Architects we maintain an extensive Estimating Department. It is a pleasure to furnish estimates or any other information within our power. Our practical experience in the solving of woodwork problems is at the free command of the profession.

CATALOGS—Write for our illustrated catalogs showing veneer doors, stair work, etc. They are furnished free upon request.

SHIPPING SERVICE—Prompt service has been our practice for 22 years.

PLANT—Our plant represents an investment of nearly one-half a million dollars and is thoroughly modern throughout. There is no millwork contract too large for us to handle satisfactorily and promptly. This line has been our specialty for years.

STANDARDIZED UNITS—We carry in stock plain red oak, unselected birch, cypress and yellow pine cut to length trim units. We can ship an ordinary house bill complete from this stock within twenty-four hours.

SUGGESTIONS FOR ORDERING—Avoid errors and unnecessary delay by observing the following instructions when ordering:

DOORS—State width, height, and thickness, quality and kind of wood, number and arrangement of panels, and style of sticking or molding.

WINDOWS—State size and quality of glass, number of lights, size of opening to be filled, and thickness of sash.

FRAMES—State width of pulley stile, and whether for wood or brick buildings.

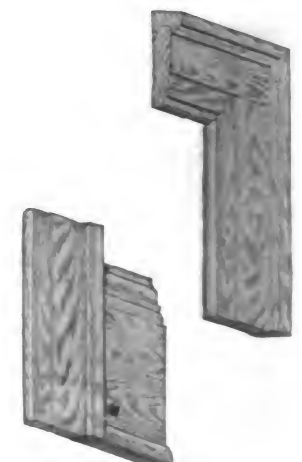
STOCK HARDWOOD TRIM
DESIGNS



DESIGN NO. 1



DESIGN NO. 2



DESIGN NO. 3

Oak Flooring Manufacturers' Association

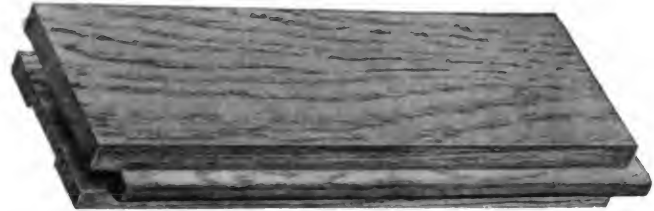
822 HAMMOND BUILDING
DETROIT, MICH.

RELIABLE MANUFACTURERS

Nashville Hardwood Flooring Co.	Acorn Brand	Nashville, Tenn.	Louisiana Long Leaf Lumber Co.	Diamond Brand	Fisher, La.
Bliss-Cook Oak Co.	Dixie Brand	Blissville, Ark.	Salt Lick Lumber Co.	Eureka Brand	Salt Lick, Ky.
M. B. Farrin Lumber Co.	Century Brand	Cincinnati, Ohio	Rittenhouse & Embree Co.	Giltedge Brand	Chicago, Ill.
Tennessee Oak Flooring Co.	Tofco Brand	Nashville, Tenn.	Carrier Lumber & Mfg. Co.	Carrier Brand	Sardis, Miss.
The T. Wilce Co.	Unequaled Brand	Chicago, Ill.	New Glasgow Planing Mill Co.	Bluegrass Brand	Glasgow, Ky.
Memphis Hardwood Flooring Co.	Chickasaw Brand	Memphis, Tenn.	Kenova Poplar Manufacturing Co.		Kenova, W. Va.
Thomas Forman Co.	Forman's Famous Brand	Detroit, Mich.	Dwight Lumber Co.		Detroit, Mich.



QUARTER-SAWED TONGUED AND GROOVED END-MATCHED OAK FLOORING



PLAIN-SAWED TONGUED AND GROOVED END-MATCHED OAK FLOORING

PRODUCTS—OAK FLOORING: PLAIN SAWED AND QUARTER-SAWED, White or Red; Thoroughly Kiln-dried, Properly Milled and Graded

STANDARD THICKNESSES AND WIDTHS—

13/16-inch thickness; widths, 1½-inch, 2-inch face and 2¼-inch face.

¾-inch thickness; widths, 1½-inch face and 2-inch face.

SPECIAL THICKNESSES—7/16-inch, 5/8-inch and 1½-inch.

PARQUETRY STRIPS—5/16-inch thickness by 2-inch face.

HERRINGBONE—13/16-inch thickness by 2-inch and 2¼-inch faces.

ADVANTAGES—The natural characteristics of Oak are too well known to require any eulogy. When made into flooring the diversified figure of Oak is exhibited to perfection. It is a wood that will harmonize with any kind of interior trim and will do more to give distinction to a home than any other part of the interior construction. Oak Flooring is demanded because it is rich and cheerful and blends harmoniously with any type of furniture and color decoration. It combines beauty, distinctiveness and durability.

Oak is a sanitary wood and requires but little care to keep it in good condition. Real estate dealers and owners know the value of Oak Flooring, and emphasize Oak Flooring when advertising their property. It assures better renting and selling values and attracts a better class of tenants.

For economy, ¾-inch thickness may be laid at a very low cost over old floors in old homes, or in new buildings over cheap sub-floors. It is matched and end-matched so that it can be blind-nailed. When laid it has in every respect the appearance of heavy flooring.

DURABILITY—In numerous public buildings and houses throughout the country in which Oak Flooring was laid from twenty-five to forty years ago these floors are in good condition today. The word "Oak" has long been a synonym for strength and endurance.

"A.B.C." SYSTEMS

OAK FLOORING—Grading Rules Revised—The grades of Oak Flooring are known as CLEAR, SAP CLEAR, SELECT, No. 1 COMMON and FACTORY.

QUARTER-SAWED

Clear—Shall have one face practically free of defects, except 3/8 inch of bright sap; the question of color shall not be considered; lengths in this grade to be 2 feet and up, not to exceed 10% under 4 feet.

Sap Clear—Shall have one face practically free of defects, but will admit unlimited bright sap. The question of color shall not be considered. Lengths in this grade to be 1 foot and up.

PLAIN-SAWED

Clear—Shall have one face practically free of defects, except 3/8 inch of bright sap; the question of color shall not be considered; lengths in this grade to be 2 feet and up, not to exceed 10% under 4 feet.

Select—May contain bright sap, and will admit pin-worm holes, slight imperfections in dressing; or a small tight knot, not to exceed 1 to every 3 feet in length; lengths to be 1 foot and up.

No. 1 Common—Shall be of such nature as will make and lay a sound floor without cutting. Lengths 1 foot and up.

Factory—May contain every character of defects, but will lay a serviceable floor with some cutting. Lengths 1 foot and up.

THE USE OF THE DIFFERENT GRADES—

Clear—QUARTER-SAWED—High class residences, hotels, apartment houses and club houses.

Sap Clear—QUARTERED—An economical substitute where a dark finish is desired. This grade is equally as durable as the CLEAR grade.

Clear—PLAIN-SAWED—High class residences, hotels, apartment houses, churches and club houses.

Select—PLAIN-SAWED—Medium priced residences, hotels and apartments; Schools, office buildings and stores.

No. 1 Common—Cheap dwellings, tenements, stores, high class factories and manufacturers' buildings.

Factory—Warehouses, factories and cheap tenements.

Correspondence Solicited.

ESTABLISHED 1855

Paine Lumber Company, Ltd,

Largest Millwork Manufacturers in the World

GENERAL OFFICES AND MANUFACTURING PLANTS
OSHKOSH, WISCONSIN

Branch Offices and Display Rooms

NEW YORK, N. Y.
4024-5 Metropolitan Life Bldg.
PHILADELPHIA, PA.
1341-2 Real Estate Trust Bldg.
WASHINGTON, D. C.
43 Merchants & Mechanics Bank Bldg.

ATLANTA, GA.
1111 Candler Bldg.
DETROIT, MICH.
2014 Ford Building
CHICAGO, ILL.
517 Chamber of Commerce

KANSAS CITY, MO.
512 R. A. Long Bldg.
OKLAHOMA CITY, OKLA.
1008 Colcord Bldg.
DALLAS, TEXAS
615 Praetorian Bldg.
PORTLAND, ORE.
318 Lumbermen's Bldg.

KORELOCK

HARDWOOD VENEERED DOORS

PRODUCTS—INTERIOR FINISH AND CABINET WORK of any description in accordance with Architects' specifications and details

In Hardwood: STAIRWORK, NEWELS, RAILS, BALUSTERS, COLONNADES AND MOULDINGS. In Softwood: PANEL DOORS,

newer plants are equipped with electrical power, the Central Power Plant for the purpose being the largest and most modern private power house ever built for woodworking purposes.

The Plants are closely connected by two Trunk Line Railroads with our forest reserves in Northern Wisconsin, where our pri-



OUR PLANTS

SASH DOORS, SASH AND WINDOWS, INSIDE AND OUTSIDE BLINDS, BUILT-UP COLUMNS, PORCH WORK AND MOULDINGS

Specialty of "KORELOCK" VENEERED INTERIOR, VESTIBULE AND ENTRANCE DOORS

vate Logging Railroads connect with the logging camps and forest operations. The timber area reserved by this company guarantees a supply of logs for full capacity for forty years, insuring ample raw material and service on all contracts undertaken.

PRODUCTION AND FACILITIES—The Plants shown in view produce two-thirds of the Standard Veneered Doors used in the world. These Plants include Saw Mill, Veneer Mill, Planing Mill, Stock Work Mill for doors and other millwork, and Odd Work Mill for doors and other cabinet or special woodwork, together with large Warehouses, Yards and Dockage and private Electric Railroad for transportation of general products. The

PALUCO FINISH—We desire to call special attention to Paluco Finish, which offers a facsimile reproduction of the finest figures in Mahogany and Quartered Oak on the surfaces of our native woods. This finish has never before been used for doors, thus representing the last thought in artistic and decorative effects. "Paluco" is a word coined by us, to readily distinguish the imitations from the genuine woods.

"A.B.C." SYSTEMS

Continued on next page

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GLASS SIZES OF SASH DOORS SHOWN

Design	2-8 X 6-8	2-10 X 6-10	2-8 X 7-0	2-10 X 7-0	3-0 X 7-0	3-0 X 7-6
380.....	18 X 54	20 X 56	18 X 58	20 X 58	22 X 58	22 X 64
398.....	22 X 32	24 X 34	22 X 36	24 X 36	26 X 36	26 X 42
407.....	18 X 42	20 X 44	18 X 46	20 X 46	22 X 46	22 X 52
434.....	18 X 32	20 X 34	18 X 36	20 X 36	22 X 36	22 X 42
437 each lt.	6 X 50	7 X 52	6 X 54	7 X 54	8 X 54	8 X 60
463.....	21 X 18	23 X 18	21 X 18	23 X 18	25 X 18	25 X 18
469 each lt.	4 1/2 X 18	5 1/4 X 18	4 1/2 X 18	5 1/4 X 18	6 X 18	6 X 18
470 each lt.	4 1/2 X 8 1/2	5 1/4 X 8 1/2	4 1/2 X 8 1/2	5 1/4 X 8 1/2	5 1/2 X 8 1/2	5 1/2 X 8 1/2
473 each lt.	8 X 6	9 X 8	8 X 10	9 X 10	10 X 10	10 X 16
492 each lt.	7 1/4 X 12 1/2	7 3/4 X 13 1/2	7 1/4 X 13 1/2	7 3/4 X 13 1/2	8 1/2 X 13 1/2	8 1/2 X 14 1/2
514.....	16 X 36	18 X 38	16 X 40	18 X 40	20 X 40	20 X 46
540.....	4 X 22	5 X 22	4 X 22	5 X 22	5 X 22	5 X 22
580.....	22 X 22	24 X 24	22 X 26	24 X 26	26 X 26	26 X 32
581.....	22 X 22	24 X 24	22 X 26	24 X 26	26 X 26	26 X 32
584.....	22 X 22	24 X 24	22 X 26	24 X 26	26 X 26	26 X 32
588.....	18 X 42	20 X 44	18 X 46	20 X 46	22 X 46	22 X 52

The glass sizes given above are the actual sizes the glass should be cut. Necessary allowance for play is made in all openings.
 Paper Templates for Oval or Irregular lights will be sent promptly on request.

LAYOUT OF DOOR DESIGNS SHOWN

Design	Stiles, inches	Top Rail, inches	Lock Rail, inches	Bottom Rail, inches	Flush- Mould Adds to Width	Raised Mould Adds to Width	Height to Top of Lock
377.....	4 1/4	5 1/4	5 1/4	9 1/4			
380.....	5 1/4	5 1/4		17 1/4		1 1/4	36
381.....	4 1/4	5 1/4	8	9 1/4			36 1/4
394.....	4 1/4	4 1/4	7	9		1 1/4	43
398.....	5 1/4	6	9 1/4	9 1/4			
402.....	6	6		16			
402 1/2.....	6	6		16	1 1/4		
407.....	5 1/4	5 1/4	7	12		1 1/4	31 1/4
422.....	5 1/4	5 1/4		17 1/4		1 1/4	
432.....	4 1/4	5 1/4	5 1/4	9 1/4	1 1/4		
434.....	5 1/4	5 1/4	7	12		1 1/4	41 1/4
437.....	5 1/4	5 1/4		17 1/4			
460.....	4 1/4	5 1/4	5 1/4	12			
463.....	5 1/4	5 1/4	5 1/4	12			
464.....	4 1/4	5 1/4	5 1/4	12			
469.....	5 1/4	5 1/4	5 1/4	12			
470.....	5 1/4	5 1/4	5 1/4	12			
473.....	5 1/4	5 1/4	8	9 1/4			
480.....	4 1/4	5 1/4		12			
482.....	4 1/4	5 1/4		12			
484.....	4 1/4	5 1/4	8	9 1/4	1 1/4		37 1/4
485.....	4 1/4	5 1/4		9 1/4			
486.....	4 1/4	5 1/4		9 1/4			
492.....	4 1/4	5 1/4		9 1/4			
580.....	5 1/4	6	9 1/4	9 1/4			43
581.....	5 1/4	6	9 1/4	9 1/4			43
583.....	5 1/4	6	9 1/4	9 1/4			43
584.....	5 1/4	5 1/4	9 1/4	12			53 1/4
586.....	5 1/4	5 1/4		17 1/4	1 1/4		
588.....	5 1/4	5 1/4	7	12	1 1/4		31 1/4

The width of Stiles and Rails given for solid Mould Doors includes sticking.

The width of Stiles and Rails given for Moulded Doors does not include the width of the Raised and Flush Moulding.

The height to top of Lock Rail is the distance from bottom of door to top of Lock Rail, including sticking or moulding.

STANDARD DOOR SIZES

1 1/4 Inch		1 1/2 Inch	
2-0 X 6-0	2-2 X 6-10	2-6 X 6-6	2-6 X 7-0
2-4 X 6-0	2-4 X 6-10	2-4 X 6-8	2-8 X 7-0
2-6 X 6-0	2-6 X 6-10	2-6 X 6-8	2-10 X 7-0
2-4 X 6-4	2-8 X 6-10	2-8 X 6-8	3-0 X 7-0
2-0 X 6-6	2-10 X 6-10	2-10 X 6-8	2-8 X 7-6
2-2 X 6-6	2-0 X 7-0	2-4 X 6-10	2-8 X 7-6
2-4 X 6-6	2-2 X 7-0	2-6 X 6-10	2-10 X 7-6
2-6 X 6-6	2-4 X 7-0	2-8 X 6-10	3-0 X 7-6
2-8 X 6-6	2-6 X 7-0	2-10 X 6-10	2-6 X 8-0
2-0 X 6-8	2-8 X 7-0	2-0 X 7-0	2-8 X 8-0
2-2 X 6-8	2-10 X 7-0	2-2 X 7-0	2-10 X 8-0
2-4 X 6-8	3-0 X 7-0	2-4 X 7-0	3-0 X 8-0
2-6 X 6-8	2-6 X 7-6		
2-8 X 6-8	2-8 X 7-6		
2-10 X 6-8	2-10 X 7-6		
2-0 X 6-10	3-0 X 7-6		

MIRROR DOORS—Any of the Panel Doors can be built for mirror one side, the opposite side having the same panel arrangement shown in design.

SIDE LIGHTS—We build Side Lights to match any of the Vestibule or Entrance Doors illustrated.

ADDITIONAL FACILITIES—When specified: We will mortise and countersink doors for Locks and Hinges.

We will put trim up complete, glueing and dowelling the mitre joints together.

We will fill, stain, and shellac or varnish the millwork before shipment.

NET PRICE LIST

On Door Designs Shown in This Catalog. Price Per Door F. O. B. Oshkosh. Size 2-8 X 6-8 and smaller, 1 3/8" thick. For other standard sizes add net extra given below to prices quoted.

Sizes	Birch (Any Color)	Plain Red Oak	Sizes	Birch (Any Color)	Plain Red Oak
2-10 X 6-8.....	\$.50	\$.65	2-8 X 7-0.....	\$.45	\$.55
2-0 X 6-10.....	.35	.45	2-10 X 7-0.....	.55	.70
2-2 X 6-10.....	.35	.45	3-0 X 7-0.....	.70	.90
2-4 X 6-10.....	.35	.45	2-6 X 7-6.....	1.05	1.35
2-6 X 6-10.....	.35	.45	2-8 X 7-6.....	1.25	1.60
2-8 X 6-10.....	.35	.45	2-10 X 7-6.....	1.45	1.85
2-10 X 6-10.....	.50	.65	3-0 X 7-6.....	1.60	2.05
2-0 X 7-0.....	.35	.45	2-6 X 8-0.....	1.60	2.05
2-2 X 7-0.....	.35	.45	2-8 X 8-0.....	1.75	2.25
2-4 X 7-0.....	.35	.45	2-10 X 8-0.....	2.15	2.80
2-6 X 7-0.....	.40	.50	3-0 X 8-0.....	2.15	2.80

(*) Designates price the same for 1 3/4" and 1 5/8" thick. Designs not starred for doors 1 3/4" thick add 55 cents net.

ILLUSTRATION OF HOW TO ARRIVE AT COST OF ANY STANDARD DOOR SIZE LISTED

(A) 3-0 X 7-0, 1 3/4", No. 402, Unselected Birch, \$3.65, plus 70 cents, or \$4.35 net price of door f. o. b. Oshkosh.

(B) 3-0 X 7-0, 1 3/4", No. 377, Unselected Birch, \$2.75, plus 70 cents and 55 cents, or \$4.00 net price of door f. o. b. Oshkosh.

For delivered price figure the weight for door at 55 pounds and the freight from Oshkosh either carload or local to your station.

Prices given on Sash Doors do not include the glass.

Prices include regular machine finish. For hand smoothing add 50 cents net per door. Doors veneered with other woods than specified above, or with two woods, or doors of sizes larger than 3-0 X 8-0, or thicker than 1 3/4", special price.

STANDARD DESIGNS OF

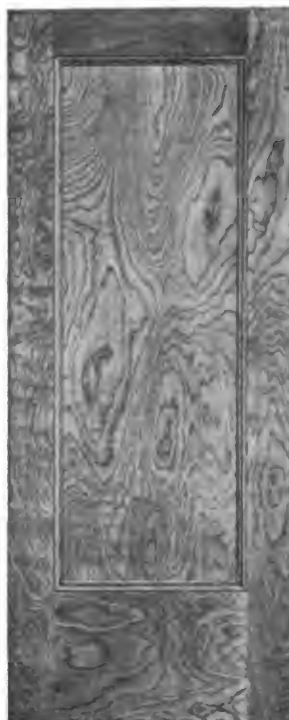


PANEL INTERIOR DOORS.



NO. 377

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$2.75. White Birch, \$2.90. Red Birch, \$3.00. Plain Red Oak, \$3.55.



NO. 381

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.05. White Birch, \$3.35. Red Birch, \$3.50. Plain Red Oak, \$4.10.



(*) NO. 402

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.65. White Birch, \$4.40. Red Birch, \$5.15. Plain Red Oak, \$4.70.



NO. 432

Flush Mould, Two Sides. Unselected Birch, \$3.90. White Birch, \$4.05. Red Birch, \$4.10. Plain Red Oak, \$4.70.



NO. 394.

Raised Mould, Two Sides. Unselected Birch, \$4.50. White Birch, \$4.80. Red Birch, \$4.95. Plain Red Oak, \$5.50.



(*) NO. 402½

Flush Mould, Two Sides. Unselected Birch, \$4.55. White Birch, \$5.30. Red Birch, \$6.05. Plain Red Oak, \$5.60.

Standard sizes other than 2 ft. 8 in. by 6 ft. 8 in. and smaller, refer to price list, page 2. Ready to ship in Birch and Plain Red Oak. Manufactured to order in any other woods.

STANDARD DESIGNS OF CORRIDOR



VESTIBULE AND ENTRANCE DOORS



(*) No. 380
 Embossed Raised Mould, Outside. Plain Flush Mould, Inside. Unselected Birch, \$3.65. White Birch, \$3.65. Red Birch, \$3.90. Plain Red Oak, \$4.45.



No. 398
 Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.05. White Birch, \$3.05. Red Birch, \$3.30. Plain Red Oak, \$3.85.



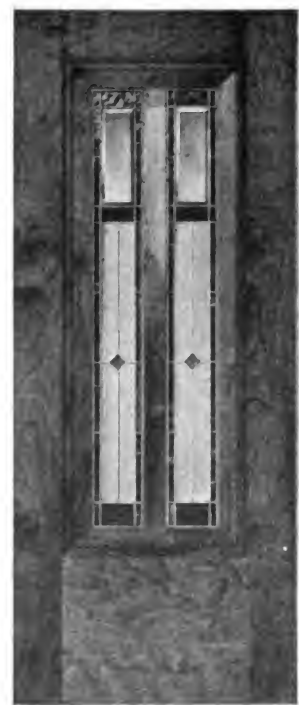
(*) No. 407
 Plain Raised Mould, Outside. Flush Mould, Inside. Unselected Birch, \$3.95. White Birch, \$3.95. Red Birch, \$4.20. Plain Red Oak, \$4.75.



(*) No. 422
 Plain Raised Mould, Outside. Plain Flush Mould, Inside. Unselected Birch, \$6.15. White Birch, \$6.15. Red Birch, \$6.35. Plain Red Oak, \$7.10.



No. 434
 Plain Raised Mould, Outside. Plain Flush Mould, Inside. Unselected Birch, \$4.65. White Birch, \$4.65. Red Birch, \$4.85. Plain Red Oak, \$5.45.



(*) No. 437
 Plain Flush Mold, Two Sides. Unselected Birch, \$5.10. White Birch, \$5.40. Red Birch, \$5.60. Plain Red Oak, \$6.20.

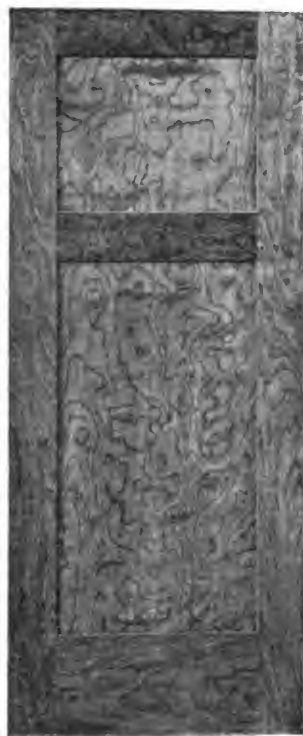
Standard sizes other than 2 ft 8 in. by 6 ft. 8 in. and smaller, refer to price list, page 2. Ready to ship in Birch and Plain Red Oak. Manufactured to order in any other woods.

CRAFTSMAN DESIGNS OF INTERIOR

KORELOCK

VESTIBULE AND ENTRANCE DOORS

(Square or Cove and Bead, Solid Mould—Trade's Option)



No. 460

Square Solid Mould, Two Sides. Unselected Birch, \$3.45. White Birch, \$3.75. Red Birch, \$3.90. Plain Red Oak, \$4.45.



No. 463

Square Solid Mould, Two Sides. Unselected Birch, \$3.60. White Birch, \$3.90. Red Birch, \$4.05. Plain Red Oak, \$4.60.



No. 470

Square Solid Mould, Two Sides. Unselected Birch, \$5.40. White Birch, \$5.70. Red Birch, \$5.85. Plain Red Oak, \$6.40.



No. 464

Square Solid Mould, Two Sides. Unselected Birch, \$3.45. White Birch, \$3.75. Red Birch, \$3.90. Plain Red Oak, \$4.45.



No. 473

Square Solid Mould, Two Sides. Unselected Birch, \$3.90. White Birch, \$4.20. Red Birch, \$4.35. Plain Red Oak, \$4.90.



No. 469

Square Solid Mould, Two Sides. Unselected Birch, \$4.20. White Birch, \$4.50. Red Birch, \$4.65. Plain Red Oak, \$5.20.

Ready to Ship in Birch and Plain Red Oak. Manufactured to Order in Any Other Woods.

"A.B.C." SYSTEMS

Continued on next page

COLONIAL DESIGNS OF INTERIOR



VESTIBULE AND ENTRANCE DOORS



No. 480

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.05. White Birch, \$3.35. Red Birch, \$3.50. Plain Red Oak, \$4.10.



No. 486

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.50. White Birch, \$3.80. Red Birch, \$3.95. Plain Red Oak, \$4.55.



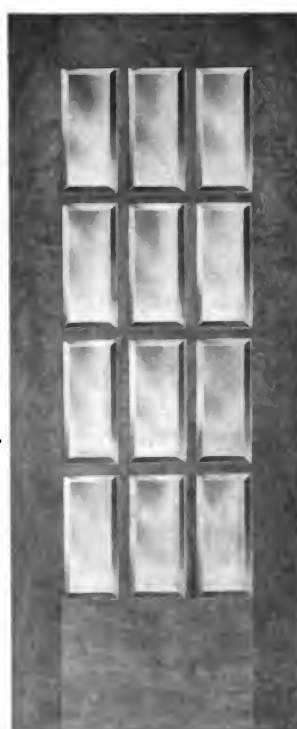
No. 485

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.35. White Birch, \$3.65. Red Birch, \$3.80. Plain Red Oak, \$4.40.



No. 482

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.35. White Birch, \$3.65. Red Birch, \$3.89. Plain Red Oak, \$4.40.



No. 492

Square Solid Mould Wood, Glass Beads. Unselected Birch, \$6.15. White Birch, \$6.15. Red Birch, \$6.35. Plain Red Oak, \$6.95.



No. 484

Plain Flush Mould, Two Sides. Unselected Birch, \$4.50. White Birch, \$4.80. Red Birch, \$4.95. Plain Red Oak, \$5.50.

Ready to Ship in Birch and Plain Red Oak. Manufactured to Order in Any Other Woods.

SANITARY AND ARTCRAFT DESIGNS OF

KORELOCK
 DOORS

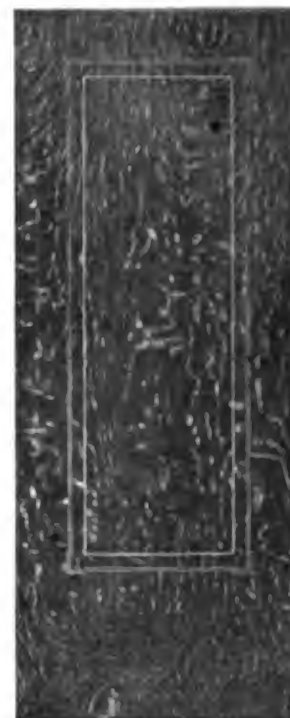
INTERIOR, VESTIBULE AND ENTRANCE



No. 514
 Inlaid with White Holly and Rosewood



No. 500



No. 512
 Inlaid with White Holly and Mahogany

TECHNICAL INFORMATION ON INLAY WORK.

Our standard sizes of inlay lines for doors are: $\frac{1}{8}$ inch, $\frac{3}{16}$ inch and $\frac{5}{16}$ inch in width. The $\frac{1}{8}$ -inch line consists of one single strip; the $\frac{3}{16}$ -inch line consists of three strips, each $\frac{1}{16}$ inch in width; the $\frac{5}{16}$ -inch line is made up of two outer strips, each $\frac{1}{16}$ inch in width and the center $\frac{3}{16}$ inch in width.

The woods most commonly used for inlay work are White Holly, Ebony, Mahogany, Rosewood, Black Walnut, Tulip and Satinwood. When the outer line consists of two lines of White Holly and the center is Ebony, the width of the inlay line is, as a rule, $\frac{3}{16}$ inch. When Mahogany, Rosewood, Black Walnut or Tulip is used for the center, the width of the outer inlay line is usually $\frac{5}{16}$ inch.

In inlaying doors, when not otherwise specified, a margin of $1\frac{1}{2}$ inches is left between the inner and outer inlay lines; 6 inches between the outer inlay lines and the edges of door at sides and top, and 12 inches at the bottom.

FINISHING OF INLAID WOODWORK—Orders for inlaid doors or any other inlaid woodwork should include staining, filling and shellacing to protect the inlay from being discolored in finishing. If the woodwork is stained after being inlaid, the finisher must carefully cover the inlaid lines with a heavy coat of white shellac. Care must be exercised to avoid any of the shellac going beyond the inlay decoration. If it does, it must be erased before stain is applied, otherwise the finish on the inlay will be irregular, and the rich, sharp effect of the inlay will be ruined.

OUR FACILITIES—We are prepared to inlay doors and panel transoms with Inscriptions, Monograms, or Crests, also inlay trim, carrying out in all the woodwork the designs and wishes of the Architect.



No. 538



No. 540

Manufactured to Order in Any Wood. Special Prices Quoted on Request.

STANDARD DESIGNS OF



ENTRANCE DOORS—TRIMMED.



No. 580

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.65. White Birch, \$3.65. Red Birch, \$3.90. Plain Red Oak, \$4.45.



No. 583

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$5.30. White Birch, \$5.30. Red Birch, \$5.55. Plain Red Oak, \$6.25.



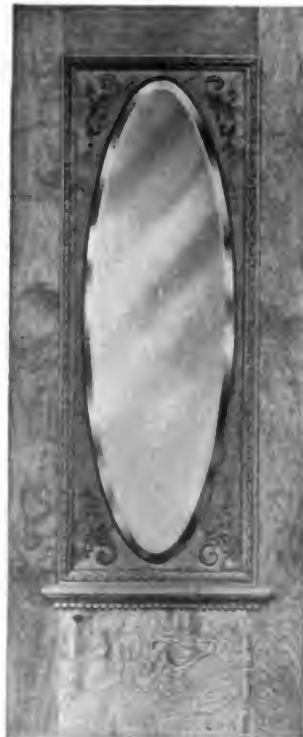
No. 581

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.95. White Birch, \$3.95. Red Birch, \$4.20. Plain Red Oak, \$4.75.



(*) No. 584

Cove and Bead Solid Mould, Two Sides. Unselected Birch, \$3.75. White Birch, \$3.75. Red Birch, \$3.95. Plain Red Oak, \$4.55.



(*) No. 586

Embossed Raised Mould, Outside. Plain Flush Mould, Inside. Unselected Birch, \$7.50. White Birch, \$7.50. Red Birch, \$7.70. Plain Red Oak, \$8.45.



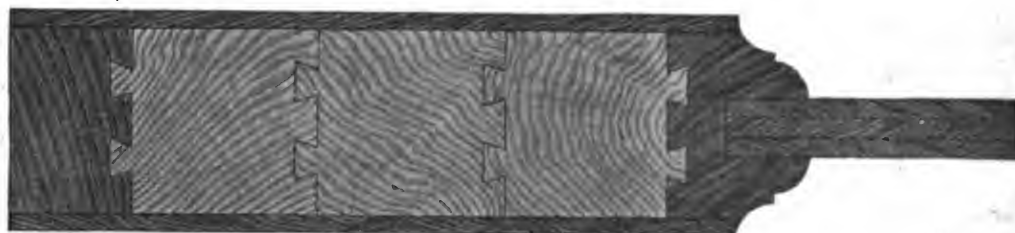
(*) No. 588

Embossed Raised Mould, Outside. Plain Flush Mould, Inside. Unselected Birch, \$4.50. White Birch, \$4.50. Red Birch, \$4.70. Plain Red Oak, \$5.30.

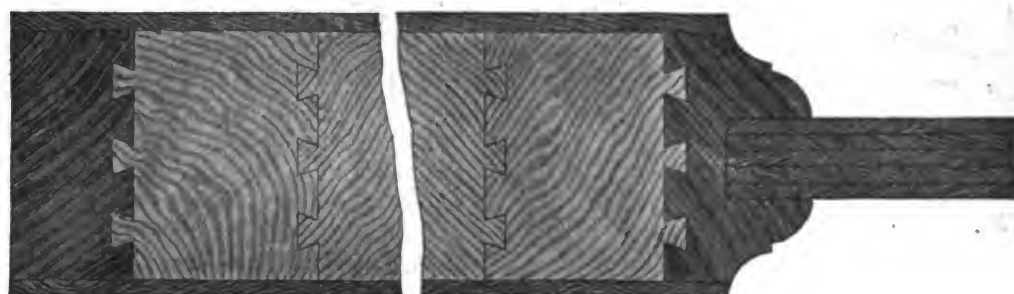
Standard sizes other than 2 ft. 8 in. by 6 ft. 8 in. and smaller, refer to price list, page 2. Ready to ship in Birch and Plain Red Oak. Manufactured to order in any other woods.

KORELOCK

DOOR SECTIONS SHOWING OUR STANDARD SOLID MOULD, RAISED AND FLUSH MOULDING AND
 ASTRAGAL JOINTS



STILE SECTION, 1 3/4 INCHES THICK, COVE AND BEAD SOLID MOULD



STILE SECTION, 1 3/4 INCHES THICK, COVE AND BEAD SOLID MOULD



Arrangement around glass

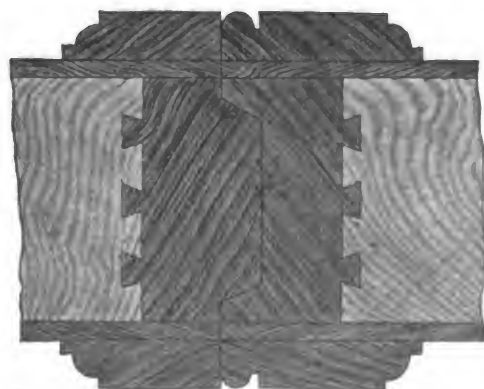


Arrangement around panel

RAISED MOULD NO. 10 OUTSIDE AND FLUSH MOULD NO. 1 INSIDE



No. 20
 ASTRAGAL FOR DOUBLE SLIDING DOORS



No. 21
 ASTRAGAL JOINT RUN ON SOLID WITH BANDING
 STRIPS



No. 22
 "T" ASTRAGAL FOR FOLDING DOORS

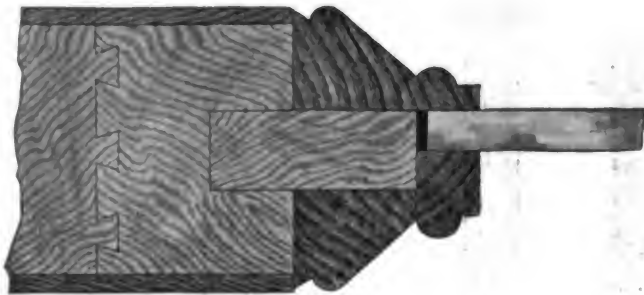
"A.B.C." SYSTEMS

Continued on next page

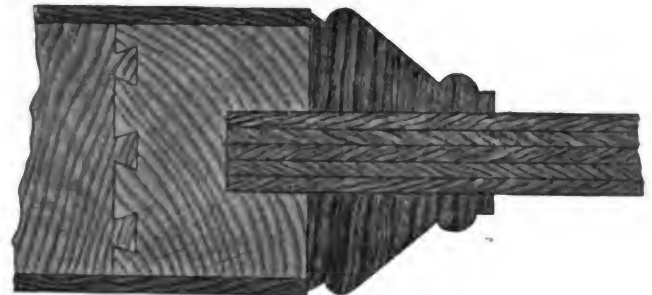
KORELOCK

DOOR SECTIONS SHOWING OUR STANDARD RAISED AND FLUSH MOULDINGS

WHEN ORDERING GIVE NUMBER OF MOULDING DESIRED



Arrangement around glass



Arrangement around panel

FLUSH MOULD NO. 2 BOTH SIDES

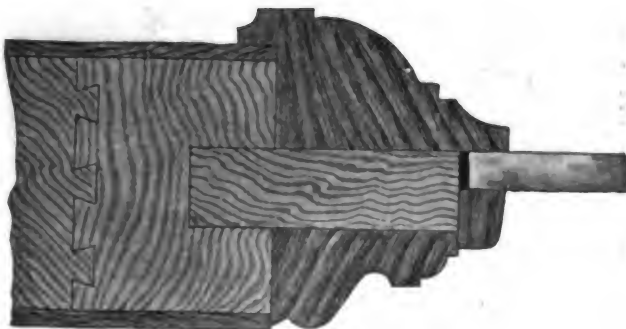


Arrangement around glass

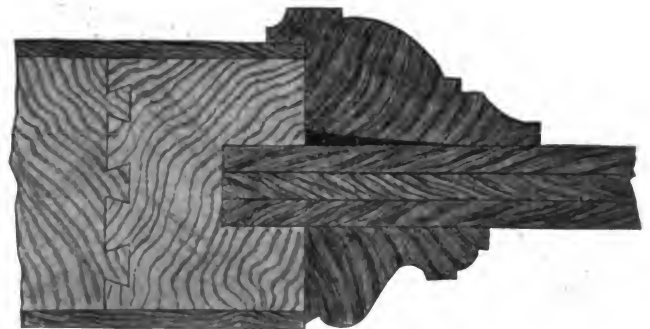


Arrangement around panel

FLUSH MOULD NO. 3 BOTH SIDES.



Arrangement around glass

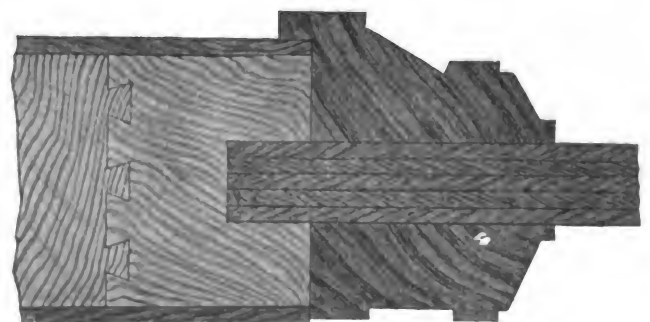


Arrangement around panel

RAISED MOULD NO. 11 OUTSIDE. FLUSH MOULD NO. 4 INSIDE.



Arrangement around glass



Arrangement around panel

RAISED MOULD NO. 12 OUTSIDE. FLUSH MOULD NO. 3 INSIDE.

CABINET AND STAIR WORK

CABINET WORK—No standard designs of Cabinet Work are illustrated, as the requirements of every building vary, depending largely on the effect the architect desires to produce.

In our Cabinet Work Department we employ a large force of experienced Cabinetmakers and expert Machine men and can guarantee service and the quality of any work we undertake to meet the requirements of the most particular architect.

The work of this department is confined to the building of Stairways, Paneled Wainscoting, Paneled Ceiling, Paneled Jambs, Panel Backs, Beam Work, Built-in Seats, Book Cases, Colonnade Openings, Veneered Interior Columns, and any Woodwork of similar nature required in the finish of buildings.

We manufacture any class of work, from the simplest to the most elaborate design, including Inlay and Ornamental Woodwork.



A SIMPLE STAIRWAY—BULL NOSE TREAD

Newel	Design No. 9
Angle Newel	Design No. 9-A
Rail	Design No. R-7
Balusters	Design No. 123
Stair Rail	No. 381
Fillet	No. 396

DESCRIPTION—The above section illustrates our standard construction of Hardwood Stair Rail. The hardwood framing around a softwood core, when properly made, insures the Rail remaining straight. The shape or mould of the Rail can be run any pattern desired.



RAIL NO. 381

"A.B.C." SYSTEMS

NEWELS

STARTING:
 Shaft, 6 x 6.
 Base, 16 in. or 18 in.
 Length, 3 ft. 9 in.
 Not including Cap.

ANGLE:
 Shaft, 5 x 5.
 Length, 3 ft. 6 in.
 Not including Cap or Drop.



NO. 9
STARTING



NO. 9-A
ANGLE



NO. 92
STARTING



NO. 92-A
ANGLE

	Birch, Yellow Pine	Brown Ash, Pl. Red Oak
No. 9	\$6.80	\$7.20
No. 9-A	4.30	4.70

	Birch, Yellow Pine	Brown Ash, Pl. Red Oak
No. 92	\$4.40	\$4.80
No. 92-A	3.20	3.60



NO. 96
STARTING



NO. 96-A
ANGLE

	Birch, Yellow Pine	Brown Ash, Pl. Red Oak
No. 96	\$6.20	\$6.60
No. 96-A	3.50	3.90



NO. 4
STARTING

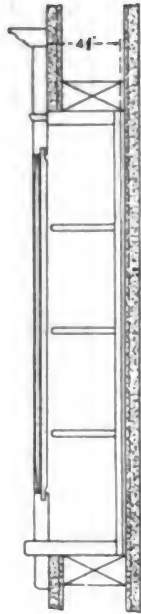
Angle Newel No. 4-A made to match Starting Newel No. 4—no shaft carvings		
	Birch, Yellow Pine	Brown Ash, Pl. Red Oak
No. 4	\$7.80	\$8.20
No. 4-A	3.50	3.90

Less than five of a size and kind, 10% extra

SHIPMENT—Stairways are shipped in the knockdown. All parts are fitted before shipment and are ready to be put together on arrival at building. A manifest accompanies shipment, giving number of bundles and crates and a list of what each contains.

Continued on next page

TYPICAL DESIGNS OF MEDICINE CABINETS, KITCHEN DRESSERS, DRIP BOARDS AND SINK LEGS. MADE TO ORDER IN ANY WOODS, ANY DESIGNS AND ANY SIZES DESIRED.



MEDICINE CABINET NO. 1

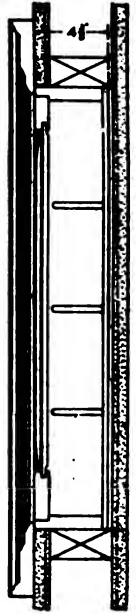
In the White. No Hardware or mirror. Put up complete. Crated ready for shipment.

Western Pine
 Basswood.
 Yellow Pine
 \$4.80

Unselected
 Birch
 \$5.20

Plain Red
 or White Oak
 \$5.60

Inside measurement, 18 x 25 in., 4 in. deep. Outside measurement of space necessary to set in wall, 20 x 27 in., 4 3/4 in. deep. Size of mirror, 14 x 20 in.
 Note—The depth can be made one or two inches deeper if desired, no extra cost. Less than five of a size and kind, 20% extra.



MEDICINE CABINET NO. 2

Inside measurement, 18 x 25 in., 3 3/16 in. deep. Other dimensions, description and prices same as Medicine Cabinet No. 1.



NO. 370



NO. 372



NO. 374

BRACKET SHELVES

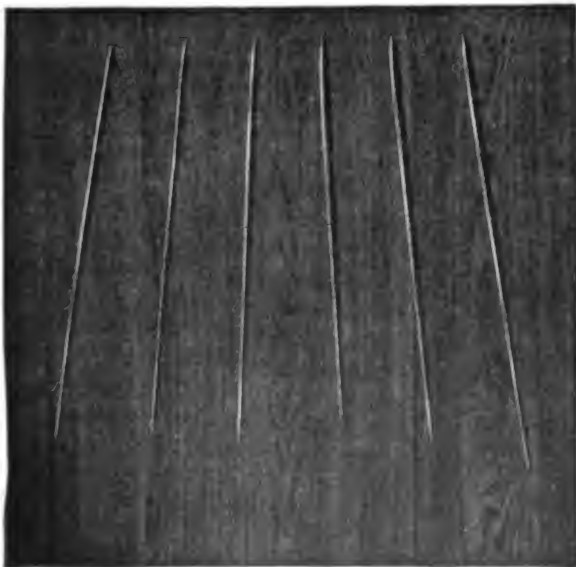
No.	Length	Yellow Pine Basswood Shelf	
		3/4 x 7 3/4	1 1/4 x 7 3/4
370	2' 6" and less..	\$0.95	\$1.05
372	2' 6" and less..	1.00	1.10
374	2' 6" and less..	1.60	1.70

For longer Bracket Shelves with either 3/4-in. or 1 1/4-in. Shelves add for each additional 6 in. in length or fraction thereof.

Nos. 370, 372. Yellow Pine or Basswood, 10c. to list; Unselected Birch, 8c. to list; Brown Ash or Plain Red Oak, 12c. to list.

No. 374. Yellow Pine or Basswood, 20c. to list; Unselected Birch, 18c. to list; Brown Ash or Plain Red Oak, 24c. to list.

Less than 10 of a size and kind, 15% extra.



DRIP BOARDS. NO. 369

Size 2-0 x 2-0 x 3/4; shaped and fluted to drain readily. Built in Maple, Birch, Brown Ash or Oak in any size desired.

Unselected Birch	\$0.80
Plain Red or White Oak	1.00
Brown Ash	1.00

For each additional lumber foot or fraction thereof, add 20c. for Unselected Birch and 25c. for Plain Oak or Brown Ash. Less than 5 of a size and kind, 10% extra.



NO. 225

SINK LEGS
 Made in wood.
 Any size.



NO. 361
 KITCHEN DRESSERS

Size 5-0 x 9-0. Put up or in Knock Down. Fronts 13/16" or 1 1/4" thick with or without Ceiling Back. Built in any wood and any size.

No.	Length	Unselected Birch Shelf		Plain Red Oak, Brown Ash Shelf	
		3/4 x 7 3/4	1 1/4 x 7 3/4	3/4 x 7 3/4	1 1/4 x 7 3/4
370	2' 6" and less..	\$0.90	\$1.00	\$1.00	\$1.10
372	2' 6" and less..	.95	1.05	1.05	1.20
374	2' 6" and less..	1.50	1.60	1.70	1.85

Continued on next page

"A.B.C." SYSTEMS

STAVED COLONIAL COLUMNS, DENTIL MOULDINGS, PORCH BALUSTERS AND RAILS

PORCH BALUSTERS



No. 120

No. 106

No. 152

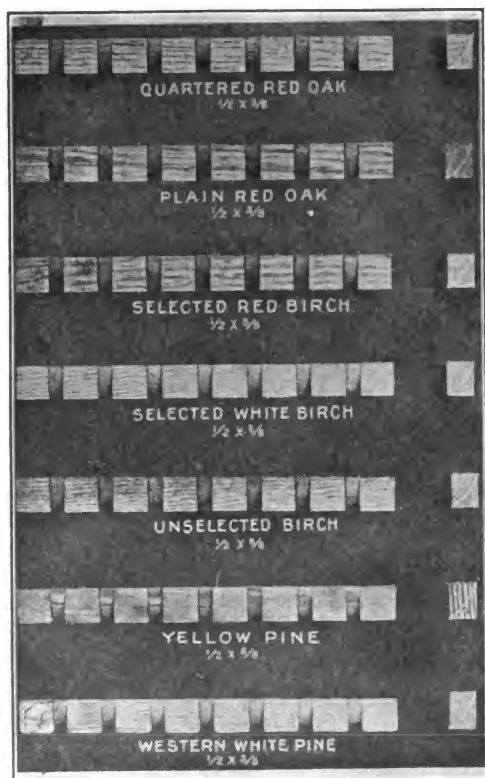
No. 98.

Pine and Whitewood. Price per 100

	16 in.	18-20 in.	22-24 in.	26-28 in.
1 1/4 inch	\$5.10	\$5.90	\$7.00	\$8.20
1 1/2 inch	7.40	9.10	11.00	13.00
2 1/4 inch	16.90	20.90	25.80	30.90
2 3/4 inch	23.60	29.20	36.20	43.50

Pattern No. 98, deduct \$1.50 from above prices.
 Above prices are for machine turned balusters.
 For sanding, add per baluster 1 cent net.
 Less than 200 of a size and kind, 10 per cent extra.

DENTIL MOULDING



Price per 100 Lineal Feet

Western White Pine Yellow Pine Unselected Birch	Selected White Pine Selected Red Birch Plain Red Oak	Quartered Red or White Oak
\$3.00	\$3.50	\$4.00

Less than 200 ft., 10 per cent extra.

"A.B.C." SYSTEMS

TOP AND BOTTOM PORCH RAILS



TOP RAIL NO. 398



TOP RAIL NO. 399



BOTTOM RAIL NO. 398-B



BOTTOM RAIL NO. 399-B

PORCH RAIL TOP

Pine and Whitewood

Price per lin. ft.

Size 1 1/4 x 3 1/4, for 1 1/4-in. baluster	\$0.13
Size 1 1/4 x 4, for 1 1/2-in. baluster	.14
Size 1 1/4 x 4 1/2, for 2 1/4-in. baluster	.15
Size 1 1/4 x 5, for 2 3/4-in. baluster	.17

The Soffit Mouldings, 3/4 x 1 1/4 in., will be sent in lineal feet with top member loose.

PORCH RAIL BOTTOM

Pine and Whitewood.

Price per lin. ft.

Size 1 1/4 x 3 1/4, for 1 1/4-in. baluster	\$0.09
Size 1 1/4 x 3 1/2, for 1 1/2-in. baluster	.10
Size 1 1/4 x 4, for 2 1/4-in. baluster	.12
Size 1 1/4 x 4 1/2, for 2 3/4-in. baluster	.13

Less than 200 ft. of a size and kind, 10 per cent extra.

STAVED COLONIAL COLUMNS

Size 6 in.	No. 90	Size 10 in.	No. 90
6 foot	\$2.60	6 foot	\$4.50
7 foot	2.70	7 foot	4.60
8 foot	2.80	8 foot	4.90
9 foot	3.20	9 foot	5.60
10 foot	3.60	10 foot	6.00
Size 8 in.	No. 90	Size 12 in.	No. 90
6 foot	\$3.30	6 foot	\$5.50
7 foot	3.60	7 foot	5.70
8 foot	3.70	8 foot	6.00
9 foot	4.20	9 foot	6.80
10 foot	4.80	10 foot	7.30

COLONIAL NEWEL

No. 90 1/2

6 and 8 in., 3 ft. 5 in. long	\$2.40
10 and 12 in., 3 ft. 5 in. long	2.90

In lots of less than five, 10 per cent extra.

Fluting Columns, 75c. net extra.

Ornamental Caps, for 6 and 8 in. Columns, 75c. net.
 Ornamental Caps, for 10 and 12 in. Columns, \$1.50 net.



COLONIAL NEWEL



STAVED COLONIAL COLUMN

Continued on next page

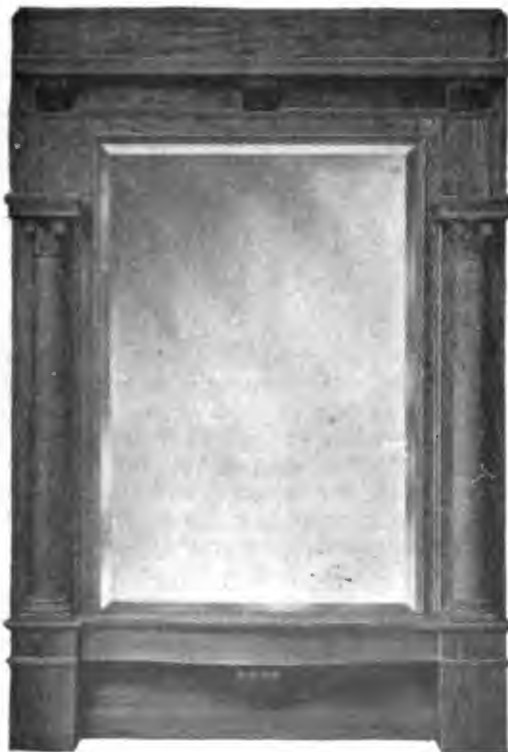
MANTELS—CHINA CLOSETS—CONSOLES.



MANTEL DESIGN "B"



MANTEL DESIGN "A"



CONSOLE DESIGN NO. 1



SIDEBOARD DESIGN "A"

Mantels, China Closets and Consoles are manufactured to order in any woods and in any sizes to meet space requirements.

"A.B.C." SYSTEMS

Continued on next page



MAHOGANY AND QUARTERED OAK

DESCRIPTION—Paluco Finish is a decorative effect obtained by a mechanical process. It offers a perfect reproduction of the finest Figured Mahogany or Quartered Oak upon the surface of our close grained Native woods, such as Birch and Maple, at a reasonable cost.

The term Paluco is a coined word, adopted as a Trade Mark, to distinguish the imitations from the Genuine Woods. This process has been used on furniture for several years, and the Pullman Company are using it in their new Steel Sleeping Cars and Chair Cars, particularly in the Mahogany. It has never before been used for doors.

ADAPTION—Paluco Finish can be applied to the panels only, or to the entire door, also to any Panel Work or flat surface Moulding, such as Jambs, Base Boards or Flat Casings. The varnish coats can be applied at the factory if desired, but with the exception of Exterior Front Doors, we advise only the Paluco Finish and a coat of shellac. When the millwork is in place this surface coat can be sanded off with fine sandpaper and the varnish applied in the regular way, using either a flat or polishing varnish.

ARTISTIC AND DECORATIVE EFFECTS—Paluco Finish offers numerous artistic and decorative possibilities. Either Quartered Oak or the Mahogany should be applied to the panels in doors and the frames stained to match, producing the effect of a picture in a frame. This is especially pleasing where one or two panel doors, No. 402 and No. 381, are used.

White Enameled Trim and Birch Doors with Mahoganized frame and Paluco Mahogany Panel is a very rich and elegant combination. We recommend Paluco Finish in either Quartered Oak or Mahogany for Flush or Hospital Doors, and especially in connection with White Enameled Trim.

SPECIFICATION—To insure the results as demonstrated in our color plates and sample work, specify "Paluco Mahogany" or "Paluco Quartered Oak," whichever is desired.

COST—We guarantee the cost of Paluco Finish not to exceed our published prices, which we make to all dealers, thus insuring full and free competition on the millwork so specified.

ARCHITECT'S PRICE SCHEDULE

Door Designs Nos. 381 and 402 Only.
 (All other designs, special prices)

Door Designs	Sizes	Finish	Price
No. 381...2' 8" x 6' 8", 1 3/4"		Paluco Mahogany	\$5.25 each
No. 402...2' 8" x 6' 8", 1 3/4"		Paluco Mahogany	6.70 each
No. 381...2' 8" x 6' 8", 1 3/4"		Paluco Quartered Oak	5.35 each
No. 402...2' 8" x 6' 8", 1 3/4"		Paluco Quartered Oak	6.80 each

For sizes other than 2' 8" x 6' 8", 1 3/4" and smaller, add the net extra given on page 2 to the above prices.

TRIM—Paluco Finish is applicable to flat surfaces only. Moulded edges are either stained to match or made in the genuine wood.

Paluco Mahogany, 7 cents per square surface foot.

Paluco Quartered Oak, 6 cents per square surface foot.

MOULDED TRIM—Paluco Mahogany Finish can be applied to the flat surfaces and the moulded edges, stained to match, giving excellent results. Paluco Quartered Oak is not adapted to moulded trim as the moulded edge of the close grained woods cannot be satisfactorily stained to match.

CARE OF HARDWOOD DOORS

Fine interior woodwork is carefully handled by the manufacturer and the ultimate consumer—the householder. In its intermediate history it passes through numerous vicissitudes that vary according to the knowledge and appreciation of the dealer and contractor.

The first essential in handling fine interior trim is a recognition of the fact that when finally placed and finished its beauty will depend not altogether upon the care exercised by the manufacturer in its production, but also—to an equal degree—upon the care exercised by the "middlemen" in handling. The next essential is a knowledge of the proper methods of handling, caring for and preserving all the artistic possibilities of the product, so that the finisher may receive it in practically the same condition as that in which it left the maker.

Realizing these two essentials in the handling of its product, in order to attain the best results, we offer the following valuable suggestions regarding the care of Hardwood Doors.

As soon as the doors are received, have a finisher give them at least one coat of filler. After fitting both top and bottom edges should be filled same as face of door. Front doors should be finished with two or more coats of exterior varnish, and the bottom edge painted. The door is shipped "in the white" with all the pores of the wood open, and naturally will absorb moisture unless protected. The packing protects it during shipment, but after it is removed the filler must be promptly applied.

Pure shellac is the best filler for all close grained woods, and should always be used if a first-class finish is expected. If the wood is to be stained, let the shellac or filler coat follow the staining, as the best color effects are obtained by applying the stain on the bare wood.

Do not hang your door in a damp, freshly plastered building. Where possible, it is always advisable to have a little artificial heat to help dry the building before a Hardwood Door is hung.

The Pitt Balance Door Company

136-138 WEST 24th STREET
NEW YORK

For our Catalog on Grilles, Gates, Ornamental Iron Work, etc., see Section 15A, Cat. 8

For our Catalog on "Champion" Metal Weatherstrips see Section 21F, Cat. 7

PRODUCTS—"PITT" BALANCE DOORS;
"PITT" RECEDING TELEPHONE BOOTH DOORS;
"PITT" RECEDING BATHROOM DOORS

DESCRIPTION—The "Pitt" Balance Door is pivoted in the middle at top and bottom. The pivots slide in grooves in floor and ceiling, imparting a double rotary and sliding motion in opening or shutting.

When closed the door can not be blown open because the wind pressure, being equally distributed over the entire door surface, amounts to a single force applied at the point at which the door is pivoted, the door, therefore, remains stationary.

A light door, quick and positive in action, incapable of striking people, is the result. The Center Panel Vestibule, Fig. 1, is designed for heavy and continuous traffic in both directions. The traffic is divided to avoid confusion. One door is labelled "IN" and the other "OUT," but both doors swing in either direction, so that should a person try to enter on the *wrong side* he or she could readily pass those going out.

We make these doors either single or double (one set outside the other), with a double-swing so that they may be pushed either right- or left-hand as desired. Single or double doors may be fastened back so as to allow large objects to be carried through them, and in summer they need not be removed, but may be securely locked back.

SPACE SAVED—The plan given herewith shows that the action of the "Pitt" Balance Doors effects a saving in floor space. Hence, the Bathroom door is of much service in Hotels, where the greatest economy of floor area, combined with the greatest comfort, is desired. Telephone Booth doors, as illustrated herewith, operate in same man-



"PITT" BALANCE DOOR IN OPERATION

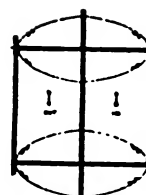


FIG. 1.—"PITT" BALANCE DOOR PLAN



"PITT" BALANCE TELEPHONE BOOTH DOOR
Door Fully Open



"PITT" BALANCE TELEPHONE BOOTH DOOR
Door Half Open



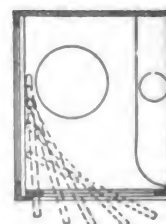
"PITT" BALANCE TELEPHONE BOOTH DOOR
Door Closed

SPECIFICATIONS — Architects, when writing for prices, should give plans and elevations showing width and height of opening in which door is to be placed; also, position of adjacent doors, radiators, counters, pillars, steps, elevators; further, character of floors and adjacent wood work, hardware and glass required, etc.

We carry in stock solid red bronze hardware, polished.

PLAN OF "PITT" TELEPHONE BOOTH DOOR

Showing Saving of Floor Space as Compared with Swinging Door



ner. Booths may be built of any desired material or finish.

Further particulars and information will be furnished on application.

INSTALLATIONS—

Hudson Terminal Building, New York, N. Y.
Royal Building, New York, N. Y.
Metropolitan Life Building, New York, N. Y.
Standard Oil Building, New York, N. Y.
Imperial Hotel, New York, N. Y.
Gotham Hotel, New York, N. Y.
Waldorf-Astoria Hotel, New York, N. Y.
Irving National Bank, New York, N. Y.
Astor Place Bank, New York, N. Y.
Bank of North America, New York, N. Y.
James McCreery & Co., New York, N. Y.
Hotel Astor, New York, N. Y.
German-American Building, New York, N. Y.
J. Lehrenkrauss & Sons' Bank, Brooklyn, N. Y.
Post Office, Attleboro, Mass.
Board of Trade Building, Boston, Mass.
No. 9 Park Square, Boston, Mass.
Liberty National Bank, Pittsburgh, Pa.
Onondaga Bank Building, Syracuse, N. Y.
Exchange Street Station, Buffalo, N. Y.
Daniel Miller Warehouse, Baltimore, Md.
Rauh Building, Dayton, Ohio
H. G. Wendland, Bay City, Mich.
Judge Building, Salt Lake City, Utah
Mitsui & Co., Yokohama, Japan,
and many others

Jas. G. Wilson Mfg. Co.

Manufacturers of Wood Rolling Partitions and Wardrobes

332 So. Michigan Avenue
CHICAGO, ILL.

3 WEST 29th STREET
NEW YORK, N. Y.

Factory
NORFOLK, VA

For our Special Protective Steel Rolling Doors and Shutters see Section 17A, Cat. 2
For our Venetian Blinds and Awnings see Section 43C, Cat. 3

PRODUCTS—WILSON'S PATENT HORIZONTAL- AND VERTICAL-ROLLING WOOD PARTITIONS; WILSON'S HYGIENIC WARDROBES

DESCRIPTION—Wilson's Rolling Partitions are adapted for church and school buildings as a means of economizing space in the subdivision of schoolrooms. About thirty thousand churches and schools are fitted with our Rolling Partitions.



VERTICAL-ROLLING PARTITIONS

WILSON'S PATENT ROLLING PARTITIONS—Are constructed of wooden slats that adjust themselves *automatically* to atmospheric changes.

The Horizontal-Rolling Partitions, as shown, *coiling up*, have no limit to the width of openings to be closed. In auditoriums and churches where large openings are to be closed, we divide the width into sections by using movable posts.



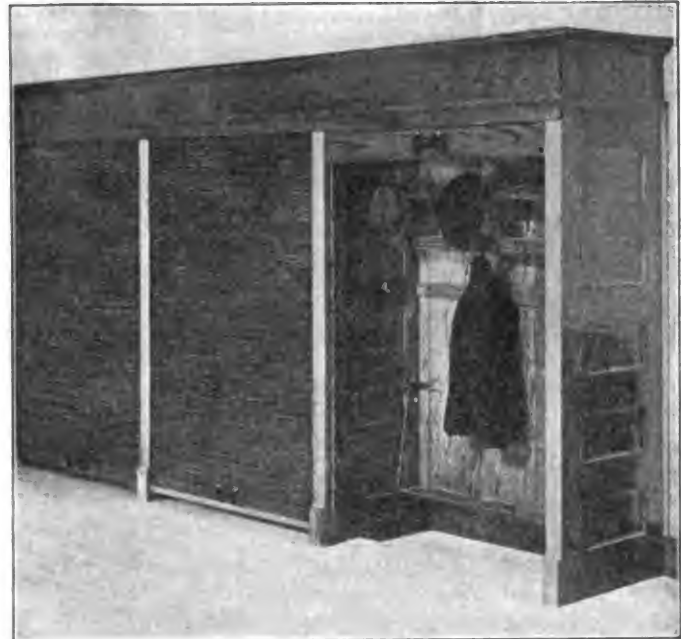
HORIZONTAL-ROLLING PARTITIONS

The Vertical-Rolling Partitions, as shown, *coiling sideways*, will readily close openings 50 feet wide without the aid of intermediate parts. Only one inch head room is required above the line of partition or clear opening. No helical springs, wire cords, or complicated cog-wheel gears are employed. The operating device is so simple that it can not get out of order.

ADVANTAGES—These rolling partitions are airtight, sound-proof, noiseless and easy in motion. Damaged slats can be replaced in a few minutes. No working parts to get out of order. A blackboard surface can be placed on the opposite side of the roller, when desired for schools and institutions.

PRICES, CATALOGS AND TESTIMONIALS—Furnished upon request to the New York Office or nearest agent.

"A.B.C." SYSTEMS



WILSON'S HYGIENIC WARDROBES—STYLE B, HORIZONTAL-ROLLING

WILSON'S HYGIENIC WARDROBES—As shown, are made in several styles desirable for schools and institutions. The arrangement, shown in the above illustration, is one plan of ventilating our wardrobes. The air, being drawn into the wardrobe from the room, at the bottom, passes out through the air shaft or flue and can not re-enter the room. This avoids the unpleasant odors of the drying clothing on a wet day. Every wardrobe is equipped with hooks, shelves and racks for the children's convenience.



WILSON'S HYGIENIC WARDROBES—STYLE D, VERTICAL-ROLLING

Wood-Mosaic Co., Inc.

Manufacturers of

Parquetry, Hardwood Flooring, Lumber and Veneers

Flooring Factory, Lumber Yards, Saw Mill, Veener
Mills and Lumber Sales Office
NEW ALBANY, IND.

Parquetry Factory, Flooring Sales Office
And Distributing Depot
ROCHESTER, N. Y.

Principal Flooring Agencies

ATLANTA, Ga., Jos. F. Gardner, 366 Piedmont Ave.
BALTIMORE, Md., J. M. Adams, 330 N. Charles St.
BOSTON, Mass., R. T. Adams & Co., 24 Bromfield St.
BUFFALO, N. Y., Stevens Floor Co., 658 Main St.
CINCINNATI, Ohio, Moores-Coney Co., St. Paul Bldg.
COLUMBUS, Ohio, Clouse & Bradford Flooring Co., 21 Chittenden St.
ERIE, Pa., Benzing-Merkle Co., Room 11 Marks Bldg.
HOUSTON, Texas, American Floor Co., 2009 Charles St.
LOUISVILLE, Ky., Wood-Mosaic Co., 643 Fourth Ave.
MILWAUKEE, Wis., John Doubrawa & Son, 630 E. Water St.
MONTREAL, Can., Montreal Wood Mosaic Flooring Co., 730 St.
Catherine St., West
NEWARK, N. J., R. A. Dorrill, 280 Bank St.
NEW HAVEN, Conn., W. H. Malay, 69 Orange St.
HARTFORD, Conn., Ardrey & Adams, 90 A Pearl St.

NEW YORK, N. Y., Wood-Mosaic Co., 9 E. 32nd St.
PHILADELPHIA, Pa., Heaton & Wood, 1706 Chestnut St.
PITTSBURGH, Pa., Empire Flooring Co., 6133 Jenkins Arcade Bldg.
PORTLAND, Me., F. M. Vickerson, 101 Fidelity Bldg.
PROVIDENCE, R. I., Ardrey & Adams Co., 107 Washington St.
ROCHESTER, N. Y., Abner Adams Co., 58 East Ave.
SAINT CATHERINES, Ont., Can., J. W. Glover, 5 Clark St.
SCRANTON, PA., Williams & McAnulty, 129 Wyoming Ave.
SPRINGFIELD, Mass., J. F. Lawson & Co., Forbes & Wallace Bldg.
SYRACUSE, N. Y., Abner Adams Co., 121 New Rosenbloom Bldg.
TOLEDO, Ohio, E. G. McFillen, 25 North Erie St.
TORONTO, Ont., Can., Toronto Parquet Floor Co., 123 Bay St.
WASHINGTON, D. C., J. M. Adams, 1126 Connecticut Ave.
WILKES-BARRE, Pa., Williams & McAnulty, 18 S. Main St.
WINNIPEG, Man., Can., A. Thomson, 501 Main St.

PRODUCTS—PLAIN AND ORNAMENTAL HARDWOOD FLOORS, PARQUET FLOORING, WOOD-MOSAIC, PARQUETRY, WOOD-CARPET, STEEL-WOVEN FLOORING

Also, a full stock of HARDWOOD LUMBER, making a specialty of INDIANA QUARTERED OAK AND OAK VENEERS

TIMBER SUPPLY AND FACILITIES—Our timber supply is of the highest quality. Ninety per cent. of the wood used is quartered White Oak. Indiana Oak is the standard by which all oak is judged. In Indiana we have our own Forests, Saw Mill and Lumber Yard. This insures us an unlimited quantity of lumber for our dry kilns.

Air-tight storage rooms at both our factories, maintained at a standard high temperature, keep our flooring free from moisture until the moment of shipment. These facilities are what help to make our flooring different from the ordinary lumber-yard product of the regular flooring mill.

Our western Flooring Factory is located at New Albany, Ind.

Our Sales Office and Parquet Factory, the only large factory of its kind in the East, with dry kilns, storage rooms, skilled mechanics and cabinet makers, is situated at Rochester, N. Y. Our equipment is such as to guarantee work of the highest grade with prompt shipment.

STOCK ON HAND—We maintain a stock of our standard sizes and designs on hand for immediate shipment.

At both our plants we have retorts in which we treat quartered White Oak to procure the famous Brown Gothic Oak, which we carry in stock both in lumber and in flooring.

SPECIAL DESIGNS AND CO-OPERATION WITH ARCHITECTS—Besides our standard stock we will submit special designs for approval and we are fully equipped to carry out designs made by architects and decorators. Any scheme of decoration, except bright blue, can be carried out in the natural woods. Ebony, Holly, Brown Teak, Green Mahajua, Mottled English Oak, Striped Tiger Wood, Red Sapeli, or Mahogany give choice of color; White Burled Circassian Walnut, Curly American White Oak and many others afford variety of grain and figure. We



make a specialty of Fontainebleau and shipdecking designs.

AGENCIES—We have agents in all large cities who are experts in floor laying. They will give contract estimates for floors laid and finished complete.

MAIL-ORDERS—Where we have no agents we will ship direct. When ordering please send a rough sketch of rooms, with accurate measurements. Full instructions and laying plans are sent with all mail orders so that our floors can be satisfactorily laid by any good carpenter.

FLOORING—Our products include plain and ornamental Hardwood Flooring, from simple strips and squares to elaborate parquetry designs.

We make all thicknesses of tongue and groove flooring, but the most economical and easily laid is 5/16" with square edge.

The parquetry borders and parquetry fields are 5/16" thick. By veneering these designs onto a panel backing the thickness is increased to 13/16 inch.

BORDERS, FIELDS AND STRIPS—Parquetry Borders are made up in 12-foot lengths and parquetry fields in convenient sized slabs for laying. Wood Carpet designs, when they are made of oak slats 1 1/3" or 2" in width, are assembled in hexagons, squares, or rhombs, for convenience in laying, but when thick (1/2", 5/8" or 13/16") they are laid in separate tongue and groove pieces 2" or 2 1/2" wide. Herringbone design (No. 706) is laid in separate pieces, whether thick or thin. The separate piece designs can be cut to lengths other than those illustrated, at approximately the same price.

Strips are cut clear of defects and are made 5/16" sq. edge or 1/2", 5/8", and 13/16" with tongue and groove. Strips are shipped in average length of 8 ft.

Our tongue and groove flooring is manufactured so that the strips make a tight joint both above and below the tongue and groove. This is a *cabinet-work* joint, and the object is to avoid the pushing up of the joints, during damp weather, to which undercut lumber-yard flooring is liable.

Our strips require a little more care in laying and much greater care in manufacture, but the result is worth the slight extra labor and expense.

SPECIFY—"Wood-Mosaic Company's 5/16-inch square edge thin parquetry," or, "Wood-Mosaic Company's cabinet joint, tongue and groove parquet flooring."

PRICES

All prices given are list and are merely for comparative figuring. Discounts will be furnished upon application.

BORDERS—The prices marked below the cuts are for 5/16 inch thick. For veneering to 13/16 inch or panel backing, 24c. list per square foot extra. Borders made up on regular curve (whether thick or thin) five times the price of thin border.

Where corner blocks are used with borders the price of corner is 25 per cent. higher than a lineal foot of the border.

FIELDS—Prices marked below the cuts of fancy parquetry fields are for 5/16 inch thick. For veneering to 13/16 inch on panel backing, 24c. list per square foot extra.

Below the wood carpet and separate piece designs prices of each and every thickness are shown.

STRIPS—Price Per Square Foot, Surface Measure.

	5/16"	1/2"	5/8"	13/16"
Plain White Oak, No. 1.....	\$0.12	....	....	\$0.25
Quartered White Oak, No. 1.....	0.15	0.25	0.28	0.33
Maple, selected White.....	0.16	0.25	0.27	0.27
Cherry, Dark.....	0.25	0.44	0.50	0.50
Walnut.....	0.25	0.44	0.50	0.50
Dark Oak.....	0.25	0.40	0.46	0.50
Mahogany, Red.....	0.40	0.70	0.80	0.80
Mahogany, White.....	0.45	0.75	0.90	0.90

Special fancy woods will have to be subject to special correspondence.

STEEL-WOVEN OAK FLOORING FOR FIREPROOF BUILDINGS—The remarkable tests which this flooring has successfully withstood has led to its use in the finest modern buildings. The Baltimore Bar Library Floor which was flooded for forty-eight hours during the fire was not damaged beyond requiring scraping and refinishing.

Examples may be seen at the New York Custom House; New Naval War College, Washington; St. Luke's Hospital, New York, etc.

The flooring, unlike the usual types of hardwood flooring used in fireproof buildings, is not cemented to the concrete sub-floor. The field is free to expand and contract independently, its own weight holding it solid. The border strips only are attached to the sub-floor.

All wood is affected to a varying extent by atmospheric conditions. A hardwood floor cemented to the concrete breaks loose when alternating damp and dry conditions cause it to swell and shrink.

DETAILS—Steel-Woven Flooring is made of blocks 4" square, 13/16" or 1 1/8" thick, grooved on all four sides and threaded on to bands of steel. The side grooves being slightly lower than the end grooves the grain in the different blocks lies at right angles. The steel strips weave the floor into a solid heavy mat free to expand and contract as a whole.

Expansion is taken up by the compression spaces near the walls and from which the whole floor can be keyed up in the case of necessity.



NEW YORK CUSTOM HOUSE—COLLECTOR'S SUITE
Two Carloads Steel Woven Flooring Supplied
Cass Gilbert, Architect

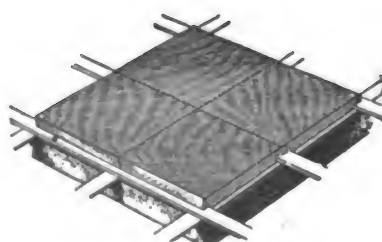


BALTIMORE COURT HOUSE—BAR LIBRARY
Wyatt & Nolting, Architects

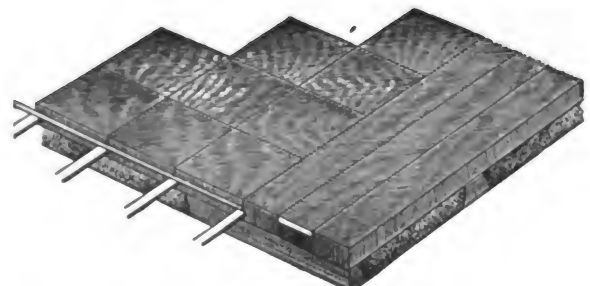
COST—The price of standard No. 1 Steel-Woven flooring, 13/16 in. thick, including steel bands, is 50c. list, and if sap is allowed, 44c. list; for No. 1, 1 1/8 in. thick, 60c. list, and if sap is allowed, 54c. list.



Detail of 4" quartered
white oak block.



Detail of four blocks
showing steel weave.

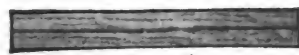


Showing two border and wall strips with bridge over compression space and short dovetailed pieces of wood to which border strips are lightly nailed.

"A.B.C." SYSTEMS

Continued on next page

PLAIN PARQUETRY BORDERS.



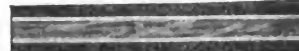
601. 3"
Oak and Mahogany
08c. list per lin. ft.



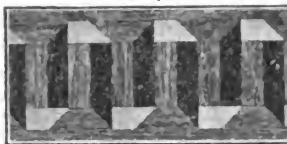
602. 3"
Oak and Walnut
07c. list per lin. ft.



603. 3"
Mahogany and Maple
14c. list per lin. ft.



604. 4"
Oak, Mahogany and Maple
19c. list per lin. ft.



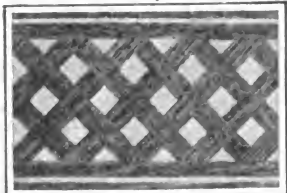
ADAM OR GEORGIAN. 630. 12"
Oak, Mahogany and Maple
32c. list per lin. ft.



ADAM OR COLONIAL. 642. 12"
Oak and Mahogany
31c. list per lin. ft.



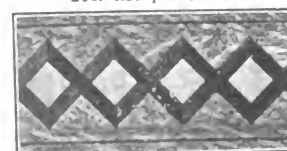
AM. COLONIAL OR GOTHIC. 619. 8"
Oak, Cherry and Maple
27c. list per lin. ft.



CHINESE FRET. 645. 10"
Oak and Maple
45c. list per lin. ft.



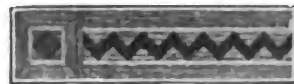
COLONIAL. 609. 6"
Oak and Mahogany
20c. list per lin. ft.



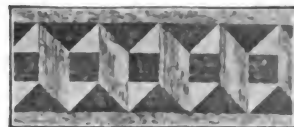
COLONIAL. 631. 12"
Oak, Mahogany, Maple and Walnut
36c. list per lin. ft.



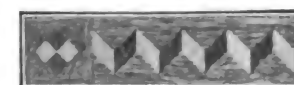
COLONIAL. 637. 12"
Oak, Mahogany and Maple
49c. list per lin. ft.



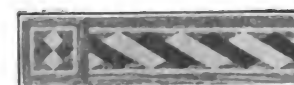
ELIZABETHAN. 610. 6"
Oak, Mahogany and Maple
30c. list per lin. ft.



ELIZABETHAN. 624. 10"
Oak, Mahogany, Maple and Dark Oak
33c. list per lin. ft.



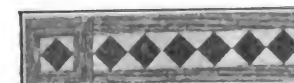
ENGLISH RENAISSANCE. 606. 6"
Oak, Mahogany and Maple
24c. list per lin. ft.



ENGLISH RENAISSANCE. 607. 6"
Oak, Mahogany and Maple
25c. list per lin. ft.



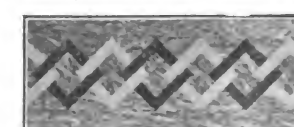
ENGLISH RENAISSANCE. 608. 6"
Oak, Mahogany and Walnut
20c. list per lin. ft.



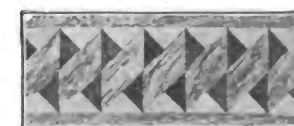
ENGLISH RENAISSANCE. 611. 6"
Oak, Mahogany and Maple
24c. list per lin. ft.



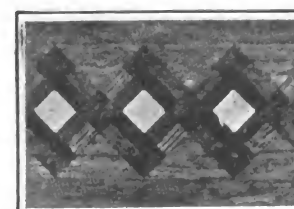
ENGLISH RENAISSANCE. 616. 8"
Oak, Mahogany and Maple
31c. list per lin. ft.



ENGLISH RENAISSANCE. 621. 10"
Oak, Mahogany and Maple
47c. list per lin. ft.



ENGLISH RENAISSANCE. 622. 10"
Oak, Mahogany and Maple
30c. list per lin. ft.



ENGLISH RENAISSANCE. 644. 16"
Oak, Mahogany and Maple
60c. list per lin. ft.



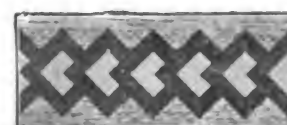
FRENCH RENAISSANCE. 613. 8"
Oak, Mahogany, Maple and Walnut
30c. list per lin. ft.



FRENCH RENAISSANCE. 643. 12"
Oak and Walnut
33c. list per lin. ft.



FRENCH RENAISSANCE. 647. 24"
Oak, Mahogany and Maple
\$1.30 list per lin. ft.



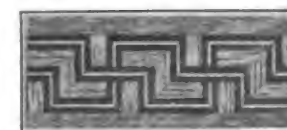
GEORGIAN. 623. 10"
Oak, Mahogany and Maple
37c. list per lin. ft.



GREEK. 605. 6"
Oak, Mahogany and Maple
28c. list per lin. ft.



GREEK. 615. 8"
Oak and Mahogany
27c. list per lin. ft.



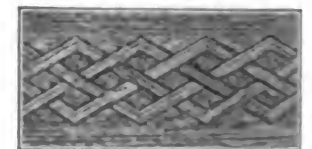
GREEK. 625. 10"
Oak, Mahogany and Maple
40c. list per lin. ft.



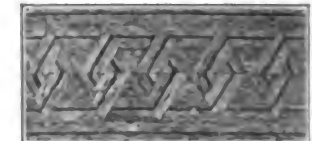
GREEK. 629. 12"
Oak and Walnut
40c. list per lin. ft.



GREEK. 641. 12"
Oak and Mahogany
43c. list per lin. ft.



HEPPELWHITE. 628. 12"
Oak and Green Mahogany
51c. list per lin. ft.



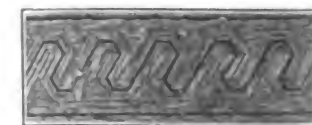
ITALIAN RENAISSANCE. 627. 12"
Oak and Walnut
38c. list per lin. ft.



JACOBAN. 612. 6"
Oak and Cherry
22c. list per lin. ft.



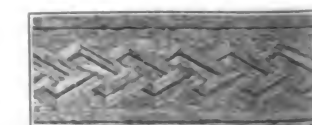
JACOBAN. 614. 8"
Oak and Mahogany
30c. list per lin. ft.



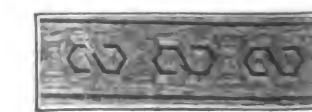
LOUIS XV. 626. 10"
Oak and Walnut
35c. list per lin. ft.



LOUIS XVI. 639. 12"
Oak, Mahogany and Maple
44c. list per lin. ft.



QUEEN ANNE. 620. 10"
Oak and Walnut
35c. list per lin. ft.



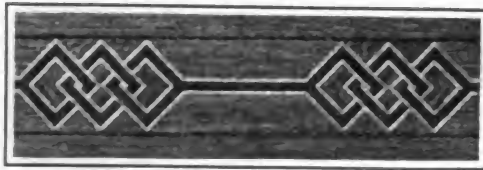
ROMANESQUE. 617. 8"
Oak and Walnut
32c. list per lin. ft.

PARQUETRY BORDERS

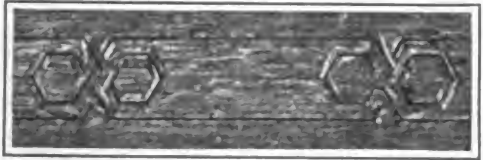
FIELDS

FIELDS

FIELDS



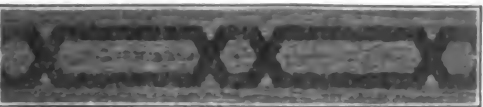
CHINESE OR ART NOUVEAU. 640. 12"
Oak, Maple and English Oak 63c. list per lin. ft.



CHINESE CHIPPENDALE. 632. 12"
Oak and Green Mahajua 46c. list per lin. ft.



CHIPPENDALE. 633. 12"
Oak and Cherry 31c. list per lin. ft.



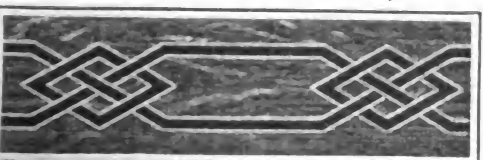
GOthic. 618. 8"
Oak and Cherry 22c. list per lin. ft.



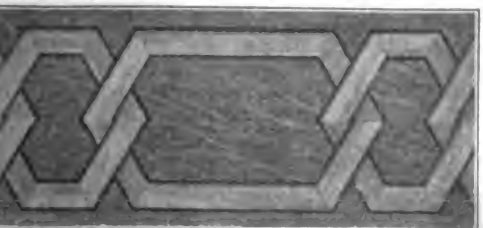
GOthic. 636. 12"
Oak, Mahogany and Maple 50c. list per lin. ft.



GOthic. 638. 12"
Oak and Rosewood 48c. list per lin. ft.



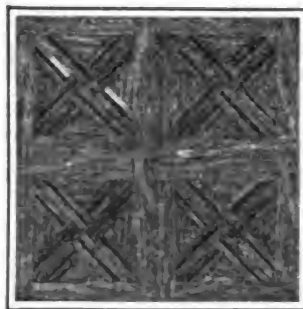
JAPANESE. 635. 12"
Oak, Mahogany and Maple 40c. list per lin. ft.



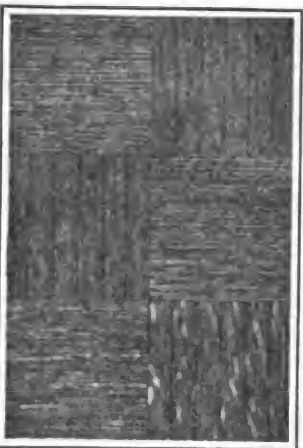
LOUIS XVI. 640. 18"
Oak, Prima Vera and Rosewood 90c. list per lin. ft.



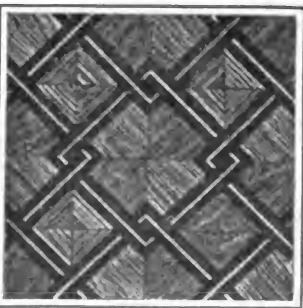
SHERIDAN. 634. 12"
Oak and Green Mahajua 40c. list per lin. ft.



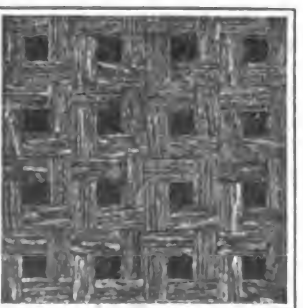
ADAM. 707
Oak and Walnut
Parquetry Design
34c. per square foot



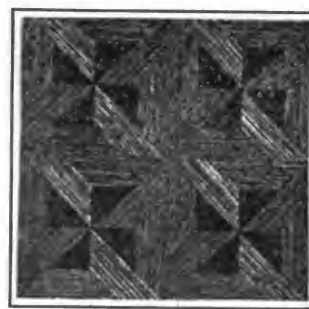
COLONIAL. 704. OAK
12-in. Squares
5/16" wood carpet design....18 c.
1/2" separate pieces (t. & g.)...29 1/2 c.
3/4" separate pieces (t. & g.)...32 1/2 c.
13/16" separate pieces (t. & g.)...37 1/2 c.
Per square foot



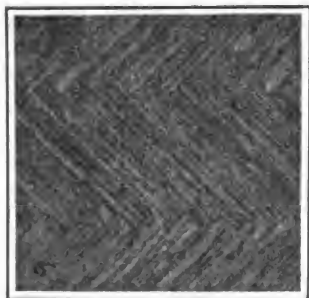
ELIZABETHAN. 711
Oak, Mahogany and Maple
41c. per square foot



ENGLISH RENAISSANCE. 703
Oak and Mahogany
Parquetry Design
32c. per square foot



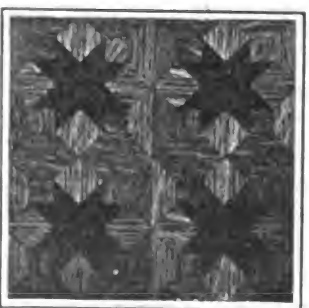
FRENCH RENAISSANCE. 712
Oak and Dark Oak
Parquetry Design
30c. per square foot



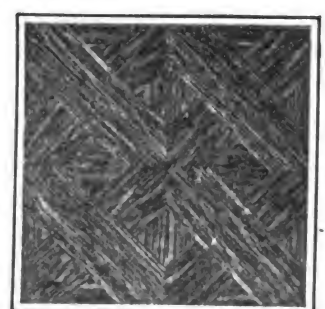
GOthic. 706. OAK
(French Herringbone)
2-in. x 16-in. Separate Strips
5/16" separate pieces.....20 c.
1/2" separate pieces (t. & g.)...28 1/2 c.
3/4" separate pieces (t. & g.)...31 1/2 c.
13/16" separate pieces (t. & g.)...36 1/2 c.
Per square foot



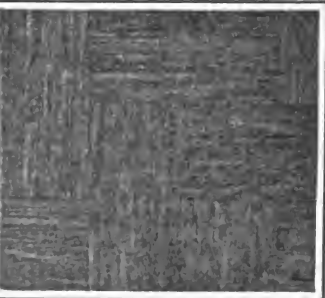
JACOBEAN. 709
Oak and Mahogany
Parquetry Design
30c. per square foot



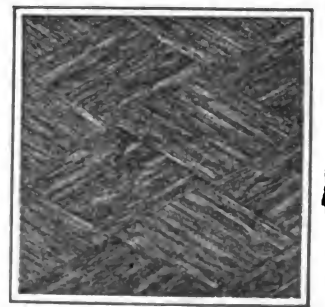
LOUIS XII. 708
Oak and Mahogany
Parquetry Design
42c. per square foot



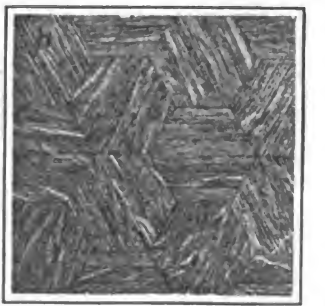
LOUIS XVI. 710. OAK
Parquetry Design
30c. per square foot



QUEEN ANNE. 705. OAK
8-in. x 16-in. Sections
5/16" wood carpet design.....18 c.
1/2" separate pieces (t. & g.)...29 1/2 c.
3/4" separate pieces (t. & g.)...32 1/2 c.
13/16" separate pieces (t. & g.)...37 1/2 c.
Per square foot



ROMAN QUARRY. 701. OAK
8-in. Rhombs or Diamonds
5/16" wood carpet design.....24c.
1/2" separate pieces (t. & g.)...38c.
3/4" separate pieces (t. & g.)...41c.
13/16" separate pieces (t. & g.)...46c.
Per square foot



ROMAN GEOMETRIC. 702. OAK
8-in. Hexagons
5/16" wood carpet design.....28c.
1/2" separate pieces (t. & g.)...42c.
3/4" separate pieces (t. & g.)...45c.
13/16" separate pieces (t. & g.)...50c.
Per square foot

The Nightingale Company

Nightingale Interlocking Wood-Block Flooring

275 BROADWAY
NEW YORK, N. Y.

PRODUCT.—NIGHTINGALE WOOD-BLOCK FLOORING OR PARQUETRY

GENERAL DESCRIPTION — NIGHTINGALE FLOORING is generally known as Wood-Block Flooring, although sometimes classed as Parquet Flooring. It is the very highest type of wood flooring for Armories, Schools, Banks, Art Museums, Public Buildings of all kinds, Vestibules, Entrance Halls, Billiard Rooms and all similar purposes.

Nightingale Flooring is constructed of accurately-milled Wood Blocks, of stock and sizes as described below. They are tongued and grooved at their lower edge (see illustration).

This detail secures twice the wearing thickness of any other regular "matched" flooring or parquetry blocks. They are also undercut in dove-tail fashion to afford keys for the mastic composition in which they are bedded.

The blocks are so accurately milled and so thoroughly seasoned that when driven up with a heavy hammer they close up to a positively tight joint that stays tight forever.

FOUNDATION AND LAYING

—Nightingale Blocks are intended for fireproof floor construction of any kind finishing with a concrete fill. Upon this the mason is to lay a 1" Portland cement bed, mixed 3 to 1, floated (not troweled) to a perfect level. When this is bone-dry we coat it with black varnish, and after this has dried each block is carefully laid in a heavy bed (hand-dipped) of our Patent Mastic Bituminous Composition, applied hot, which cements each block down securely. *No nails are used or required.* After the floor is laid it is planed off to a perfectly smooth and dead level and should then immediately receive the painter's finish—oil, varnish or wax, as the architect may specify.

SPECIFICATION—The above description, together with the kind of wood block, field and border design desired, covers the principal points to be embodied in architects' specifications.

Illustrations of field and border patterns, with approximate comparative cost, specification blanks, testimonials, etc., are promptly sent to architects upon inquiry.

THE WOOD BLOCKS—The woods we prefer to use and the sizes of blocks recommended are as follows:

Thickness.	Width.	Length.	
$\frac{3}{4}$ " or $1\frac{1}{8}$ "	$\times 2\frac{3}{4}$ "	$\times 12$ " or $12\frac{1}{2}$ "	Comb Grain Yellow Pine
$\frac{3}{4}$ " or $1\frac{1}{8}$ "	$\times 2$ "	$\times 12$ " or 14 "	Quartered White Oak
$\frac{3}{4}$ " or $1\frac{1}{8}$ "	$\times 2$ " or 4 "	$\times 12$ " or 14 "	Teak

ADVANTAGES—These floors, having no hollow spaces under them and being insulated from the concrete by the var-

NIGHTINGALE
TRADE-MARK
Reg. U. S. Pat. Office

nish and mastic, are dampproof, dryrot-proof, watertight, elastic, noiseless, solid and immovable, and absolutely sanitary. Evidently they are also slow-burning, practically fireproof.

DESIGN OF FIELD AND BORDERS—The field is mostly, and preferably, laid in Herringbone Patterns, but we can also lay it in square, basket and interlacing parquet patterns and shall be glad to submit designs.

For Borders we recommend plain strip work of two or more rows of blocks. These can be of different wood from the field, where a color effect is desired. We also lay parquetry-pattern borders.

COST AND ESTIMATES

Nightingale Flooring is permanent, needs no repairing, can scarcely be worn out and requires no understructure of sleepers or any underflooring. It is, therefore, the cheapest wood floor that can be laid, considered over a period of years.

We quote no prices per square foot, as each estimate varies according to the circumstances, location, quantity, etc. We quote lowest possible prices upon receipt of architects' plans and specifications.

RESPONSIBILITY — All our work is warranted for one year under a strictly binding guarantee.

A few of our installations:

Building	Location	Architects
Minturn Hospital for Scarlet Fever and Diphtheria.....	New York, N. Y.....	Renwick, Aspinwall & Owen
Corcoran Gallery of Art.....	Washington, D. C.....	Ernest Flagg
Ninth Regiment Armory.....	New York, N. Y.....	W. A. Cable & E. A. Sargent
Mills Hotel No. 1.....	New York, N. Y.....	Ernest Flagg
New Mills Hotel.....	New York, N. Y.....	Copeland & Dole
Miss Spence's School for Girls.....	New York, N. Y.....	James B. Baker
Fourteenth Regiment Armory.....	Brooklyn, N. Y.....	Robinson & Knust
Offices Royal Insurance Co.....	New York, N. Y.....	Howell & Stokes
Offices Lozier Motor Company.....	New York, N. Y.....	Schickel & Ditmars
New Gymnasium, United States Military Academy.....	West Point, N. Y.....	Cram, Goodhue & Ferguson
Composition Rooms, World Bldg.....	New York, N. Y.....	Horace Trumbauer
Ritz-Carlton Hotel and Carlton House.....	New York, N. Y.....	Warren & Wetmore
Suffolk Savings Bank.....	Boston, Mass.....	Cass Gilbert
Cambridgeport Bank.....	Cambridgeport, Mass.....	R. Clifton Sturgis

THE CORCORAN GALLERY OF ART

Washington, D. C., October 7th, 1904.

MR. JAMES NIGHTINGALE:

Dear Sir—In reply to your favor of the 13th inst., I beg to say that during the summer of 1898 all of the Wooden Floors of this building were laid in the "Nightingale Patent Interlocking Wood-Block Flooring." Since these floors were laid, we have had in this building in the neighborhood of one million visitors and it affords me pleasure to state that the floors show no material wear, and that they are to-day in quite as good condition as they were when first laid. I can attest to their solidity, their noiselessness and their warmth. I have observed no indications of dry-rot, or dampness, and I find them to be entirely waterproof.

Very truly yours,

(Signed) F. B. McGUIRE,
Director.

The E. T. Burrowes Co.

Burrowes Rustless Screens

Custom-made

PORTLAND, MAINE

Branch Offices and Salesrooms

ATLANTA, GA.
BALTIMORE, MD.
BIRMINGHAM, ALA.
BOSTON, MASS.
BUFFALO, N. Y.
CHARLOTTE, N. C.
CHICAGO, ILL.
CLEVELAND, OHIO
COLORADO SPRINGS, COL.
DAYTON, OHIO
DES MOINES, IOWA
DETROIT, MICH.
DULUTH, MINN.
INDIANAPOLIS, IND.
JACKSONVILLE, FLA.

KANSAS CITY, MO.
LOUISVILLE, KY.
MEMPHIS, TENN.
MOBILE, ALA.

MONTREAL, CANADA
NASHVILLE, TENN.
OKLAHOMA CITY, OKLA.
PHILADELPHIA, PA.

PITTSBURG, PA.
PORTLAND, ORE.
ROCHESTER, N. Y.
SAN ANTONIO, TEX.
SAN FRANCISCO, CAL.
SAVANNAH, GA.
SCRANTON, PA.
SEATTLE, WASH.
SPOKANE, WASH.
ST. LOUIS, MO.
TRENTON, N. J.
TORONTO, CANADA
WASHINGTON, D. C.
WINNIPEG, CANADA



INSERTING A BURROWES OUTSIDE
SPRING SLIDING SCREEN

driver sent with each order. Requires no skill; anyone can do it.

The purpose of the adjustment is: (1) To secure the most perfect fit practicable in a sliding screen; (2) To offset structural inequalities in window frames (wider at one end than at other); (3) To overcome the effect of weathering and settling of the house from season to season; (4) To guarantee sufficient spring tension during extended dry weather, and to avoid binding and sticking in wet weather.

This patented screen has a deep groove in left stile with two adjustable bearings near top and bottom of groove. The right stile has a like groove with two elliptical balance springs opposite adjustable bearings. Springs and bearings are concaved to slide on narrow moldings on blind stop (for outside screens) and on stop bead (for inside screens). Lips of grooves overlap slide runs without frictional contact.

Adjustment is by means of a brass screw bolt connected with adjustable bearings through a nut embedded in screen frame. By turning bolt out or in, changing distance between screen bearings, the most perfect sliding fit is secured. While the first fitting is usually permanent, this device provides for readjustment at any time.

Continued on next page

PRODUCTS—HIGHEST-GRADE RUSTLESS INSECT SCREENS OF ANY SHAPE, MATERIAL AND FINISH, WITH WOOD OR METAL FRAMES, CUSTOM-MADE FOR Windows, Doors, Porches, Outdoor Sleeping Rooms, all Irregular Openings and Cages for Pivoted Sash

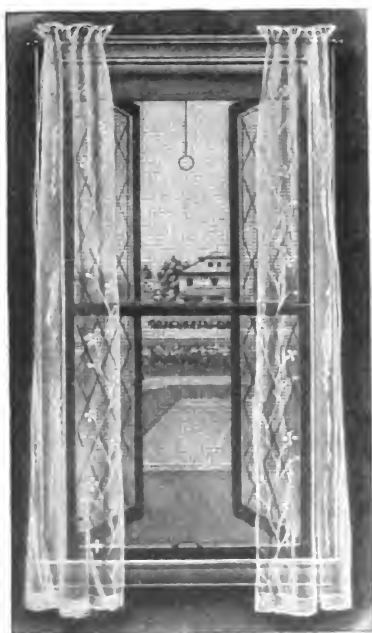
TERMS—Thirty days' trial—returnable if not up to specifications—freight allowed on orders of reasonable size in United States and Canada. No charge for packing or carting.

WOOD-FRAME SCREENS

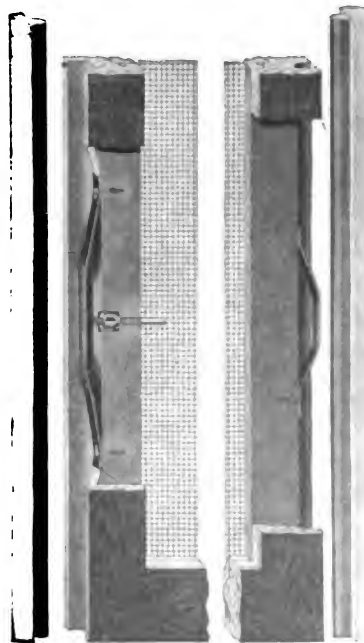
— Burrowes Screens are made from any desired wood and of any finish. For outside use we recommend selected and kiln-dried Michigan pine, well painted to match immediate surroundings, and varnished. Screen doors may be of the same wood as house doors, and finished to match.

NEW CENTURY SPRING SLIDING SCREENS

—The New Century (wood frame) Spring Sliding Screen (patented) is designed to slide and to be used at either upper or lower opening of double-hung windows, and may be arranged for use either inside or outside the sash. It is adjustable by means of a small screw-



TWIN SLIDING INSIDE SCREENS FOR
HINGED CASEMENT WINDOWS



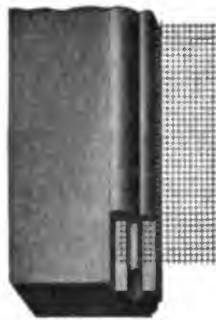
SECTION OF NEW CENTURY WINDOW
SCREEN SHOWING ADJUSTMENT
(LEFT SIDE) AND BALANCE SPRING
(RIGHT SIDE)

"A.B.C." SYSTEMS

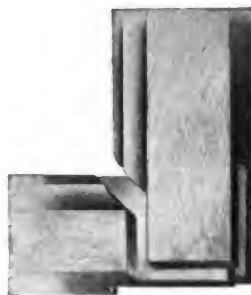
LOCK STRIP FASTENING—Our method of fastening the netting with groove and spline, by specially constructed machinery, draws taut and securely fastens **every strand** of wire, without tacks, permanently smooth and flat.

STRONG CORNERS—Frames are very rigid and strong at corners, yet of light model, no nails or dowels used. The shoulder of tenon is coped to fit inner molded edges.

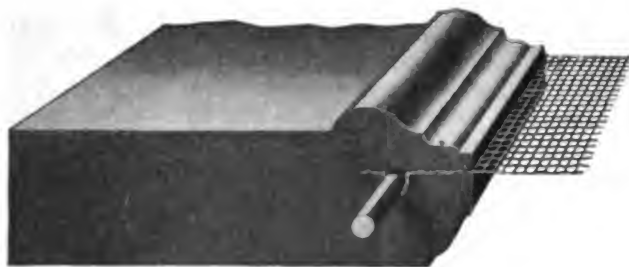
NETTING—Burrowes Rustless Copbronze Nettings are over 93% pure bronze, absolutely rustless, practically indestructible. Burrowes Enameled Galvanite is heavily coated with a non-rusting alloy of zinc and tin enameled jet black. Carried in stock in 14, 16, 18 and 24-mesh, also a specially heavy weave for doors. Other weaves to order. Extra-heavy 3-mesh wire guard used to reinforce basement screens.



LOCK STRIP FASTENING

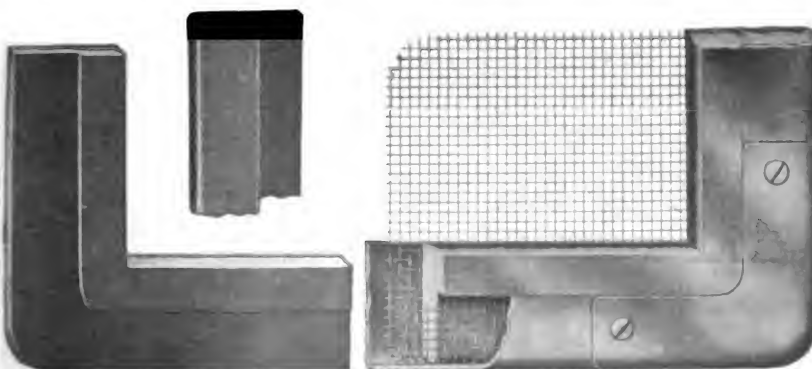


CORNER CONSTRUCTION



HEAVY NETTING FOR DOORS

WOOD FINISHES—Thirty-six standard paint finishes and 36 stain, filler, or natural wood finishes (varnish or wax-coated). Will also finish to any sample, both color and treatment.



SOLID METAL INNER FRAME AND WIRE-HOLDING CASING

METAL SCREEN ASSEMBLED

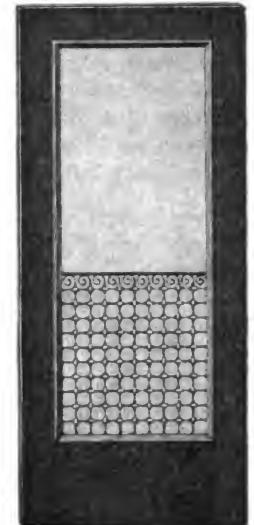
"A.B.C." SYSTEMS

BURROWES ALL-METAL SCREENS—are stronger and stiffer than others, yet smaller in the frame. The "Regis" has an inner sub-frame of sherardized (rust-proof) steel, electrically welded at corners, making a perfectly rigid support for netting. Encased in smooth, wire-holding casing and corner casings flush on outer edge. Held together by bronze screws and housings—easily rewired. All steel parts thoroughly sherardized and non-rusting—frames lacquered and enameled any color. Also made of solid bronze.

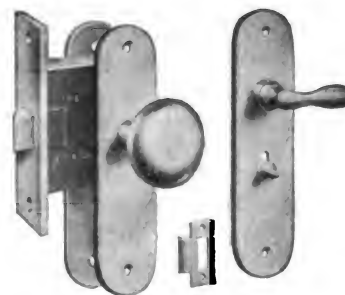
"Primus" Metal Screens have one-piece continuous rigid solid metal frame, netting soldered to face, electrically welded at corners, sherardized, painted and enameled. Both types of Metal Screens made of solid bronze if desired—absolutely rustless.

SCREEN DOORS—Made in many standard designs—also to architects' plans and specifications in any wood and any finish. They are very strong, made with the greatest care from best selected, kiln-dried lumber, either straight-grained pine painted to any desired color, or hardwood to match the house door.

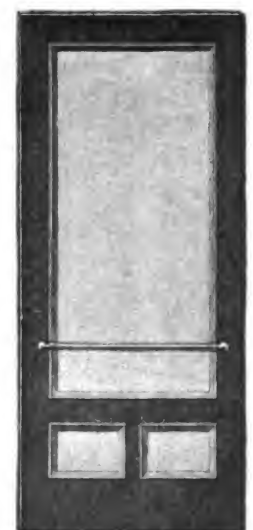
Netting is over twice as heavy as for window screens, lockstrip fastening. Lower panels reinforced with heavy 3-mesh guard, 1/4-inch Diamond Mesh Guards, or ornamental Grilles of bronze or iron.



GRILLE



DOOR SET NO. 523



ROD GUARD

HARDWARE—In the standard finishes, made from our own or selected designs. Door set No. 523 is always furnished unless others are specified. A wide range of escutcheon plates, handles, cylinder locks for doors, special hangers, hinges and fasteners for top-hung, hinged or casement windows.

We supply also a variety of grilles, wire guards, door checks, push and pull plates and rod guards. Other door designs mailed on application.

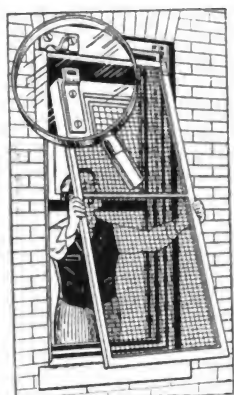
Phenix Manufacturing Co.

Manufacturers of

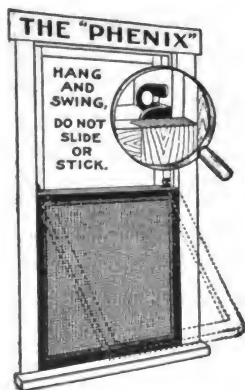
Rustproof Fly Screens, Awnings, Hangers and Fasteners for Screens and Storm Windows

OFFICE AND FACTORY: 020-060 CENTER STREET
MILWAUKEE, WIS.

PRODUCTS—Sole Manufacturers of "Phenix" CUSTOM-MADE FLY SCREENS for Windows, Doors and Veranda Enclosures (Wood Frames Only); COMBINED WINDOW SCREENS AND AWNINGS; STORM WINDOWS, DOORS AND ENCLOSURES; REVERSIBLE OR REVOLVING WINDOWS; HANGERS AND FASTENERS for Window Screens and Storm Windows



FULL LENGTH SCREEN



SWINGING HALF SCREEN

DESCRIPTION—Phenix Doors, Window Screens, Veranda Enclosures, and Storm Sashes are built of the best select grades of seasoned white pine (the best wood for outside use), well painted. Front entrance doors and interior screens to match in class of wood and finish. Full length screens, doors, veranda enclosures and storm sashes are $1\frac{1}{8}$ " thick, half screens $\frac{3}{8}$ " thick.

WIRE NETTING—We use the best grades, evenly woven, in rustproof pearl and copper-bronze wire cloth.

CONSTRUCTION—Phenix Framework throughout is made and put together firmly with our special dovetail hardwood dowel joint set in glue, guaranteed to be stronger and far superior to any mortise-and-tenon joint in carrying strength, and will positively never sag.

METHOD OF WIRING—In Phenix Screen Work throughout every wire thread is held taut by wedging wire cloth into groove with dowel grip, and covering it with neat cover molding.

WOOD FINISH—Is made to correspond with the surrounding woodwork, painted three coats of best lead-in-oil, gloss finish. Hardwoods are filled, stained, with finishing coats of spar varnish, rubbed.

FULL LENGTH SCREENS AND STORM SASHES—Are made to cover the

entire opening to secure perfect ventilation, and hung with Phenix Hangers and Fasteners (No. 1 or No. 2) from the inside as easily as you would hang a picture, and easily adjusted for the cleaning of windows.

HALF-LENGTH SCREENS—Are made for the lower half of windows, with shut-off stop at meeting rail; hung with Phenix Hangers and Fasteners (No. 53) to hang and swing; do not slide and stick. Will outlast any sliding screen made.

COMBINATION SCREENS AND AWNINGS—Are made by attaching awning with Phenix Patent Method directly to full-length screens, and operating awning through said screen from inside without opening screens. Standard 8-oz. awning stripes are used, and colors are guaranteed not to run.

VERANDA SCREEN AND STORM ENCLOSURES—Are made in convenient sections in tongue-and-groove joint pattern, and fastened together with Phenix Flush and Corner-Joint Fasteners Nos. 60 and 70.

SCREEN DOORS—Are made in many designs, in any wood and finish, and wired, in the same method as window screens with heavy netting. Panels reinforced with grilles or 3-mesh guard or handbars if desired, and supplied with good standard locks, or pulls and push-plates, loose-pin butts and coil springs in finish to match.

REVERSIBLE WINDOWS—For regular and balcony windows they are made with swinging sash jamb to swing into room for convenient cleaning.

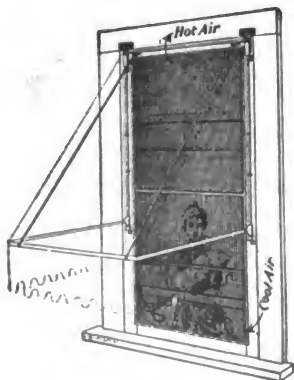
CLASS OF WORK AND ESTIMATES—We solicit the best class of to-order work only in large or small contracts. Estimates are cheerfully furnished.



PHENIX REVERSIBLE WINDOW. EASY CLEANING

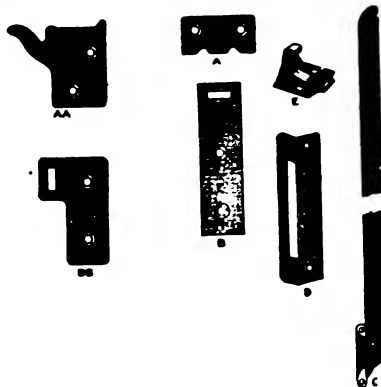


STORM SASHES EXTENDED FOR CLEANING OR VENTILATING

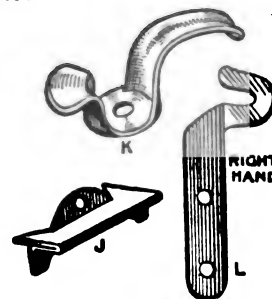


COMBINED SCREEN AND AWNING OPERATED FROM INSIDE

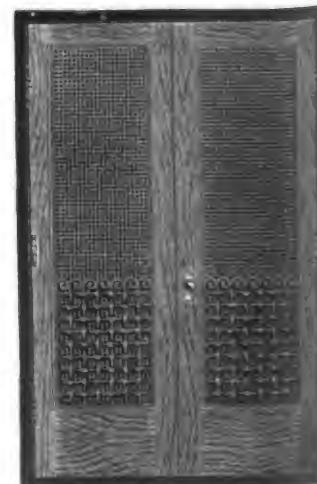
"A.B.C." SYSTEMS



PHENIX HANGER AND FASTENER NO. 1 OR 2



HALF SCREEN HANGER AND FASTENER NO. 53



DOOR SCREEN

The Protective Window Screen Co.

Sole Manufacturers of

The Protective and Beadlock Window Screens

PITTSBURGH OFFICE
No. 712-20 Jarvella Street, N. S.

MAIN OFFICE AND FACTORY
BEN AVON, PENNA.

NEW YORK OFFICE
Marbridge Building

PRODUCTS—Window Screens: THE PROTECTIVE WINDOW SCREEN affording Protection against Burglary and Insects; THE BEADLOCK WINDOW SCREEN, against Insects only

THE PROTECTIVE WINDOW SCREEN. Patents Pending—This form of screen is a combined Insect Screen and Window Guard. Its use prevents delirious or insane hospital patients from leaping through an open window. It also affords protection for children and the aged against accidents happening from leaning out of the window. It adds to the cheerful appearance and beauty of the room (note small light or leaded-glass effect, Fig. 1). Solves the problem of how to admit a constant supply of fresh air to residence sleeping chambers and, at same time, prevent the entrance of burglars and sneak thieves. It should be installed in all bedrooms located on ground floors or over porches.

Very essential as a sanitary measure in toilet rooms, kitchens and other rooms where ventilation is required both day and night.

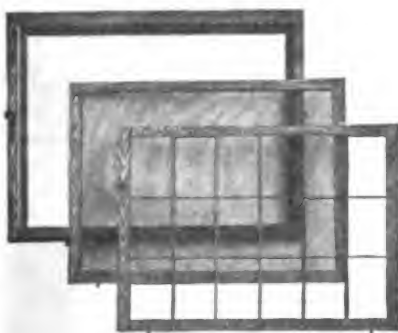


FIG. 2—SHOWING THREE FRAMES COM-
PRISING FORM 3

FORMS—THREE DISTINCT FORMS of Protective Window Screens are made in order to meet every class of service:

Form 1—Consists of Screen and Grid combined in one frame.

Form 2—Consists of one outer frame on which is mounted the screen cloth, and one inner frame on which is mounted the grid. This form permits the use of screen independently of the grid.

Form 3—Consists of one outer frame made to receive two inner frames, on one of which is mounted the screen cloth and on the other the grid. This form admits the use of screen

and grid either independently or combined. (See Fig. 2.) Form 3 is generally preferred by hospitals.

LOCKING DEVICE—ALL FORMS—All Forms of The Protective Window Screen are locked in position by use of one locking device, the mechanism of which is such that the entire screen may be removed in five seconds (actual test time) by nurse or any one on the inside permitted to do so.

The ease and speed with which the screen may be removed constitute an especial boon to the housewife in cleaning windows. This is an advantageous feature possessed, as far as we know, by no other screen.

THE BEADLOCK WINDOW SCREEN—This screen is designed mainly for Ventilation and protection against insects. It occupies a position on the outside of the window between the jambs, and is fastened on outside bead by the use of eccentrics, as shown in Fig. 3.

The Beadlock Screen may be removed by a half-turn of each eccentric. No extra strips of any kind are required; no marring or defacing



FIG. 1—INTERIOR VIEW OF PRO-
TECTIVE WINDOW SCREEN
LOCKED IN POSITION

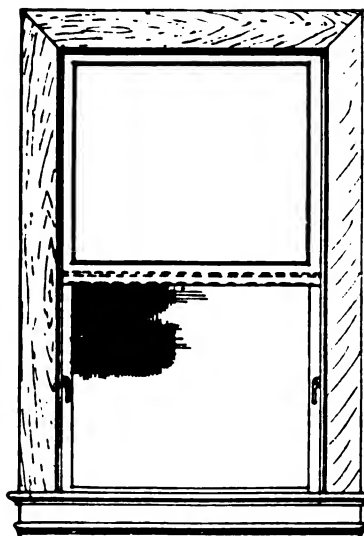


FIG. 3—SHOWING AN INTERIOR
VIEW OF BEADLOCK SCREEN
WITH LOWER SASH RAISED

For further Particulars ad-
dress nearest Branch Office

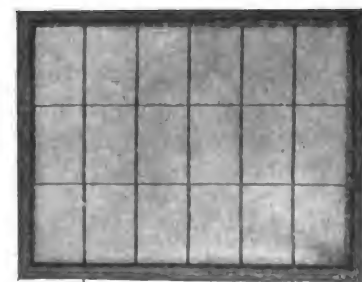


FIG. 4—SHOWING THE PROTECTIVE
WINDOW SCREEN AS IN FORM 1

of window; no binding or warping as in the case of sliding screens; no adjustment of any kind required other than that effected by use of the eccentrics.

Made half-window or full-window sizes and with any kind of screen cloth desired.

FACILITIES—Factory fully equipped with special modern machinery and first-class mechanics. Orders for screens of all kinds are promptly filled, and deliveries made with dispatch throughout the United States.

The Cincinnati Fly Screen Co.

Manufacturers of

Rewirable Metal and Wood Frame Fly Screens

CINCINNATI, OHIO

SELLING AGENCIES IN ALL PRINCIPAL CITIES

PRODUCT—Sole Manufacturers of the CINMANCO REWIRABLE ALL-METAL FRAME FLY SCREENS, covered by letters patent.

CINMANCO SCREENS—They can be made in various shapes and forms necessary to equip a house complete.

Frames riveted or screwed as desired.

ADVANTAGES—CINMANCO Screens are the only metal-frame Fly Screens that can be **rewired** without returning them to the factory. Our agents will gladly demonstrate the rewirable feature (which none of our competitors can do). They slide in our Improved Turned-Edge Copper Guides, extending the full height of the window. Will not rot, warp, shrink or swell; work easily in wet or dry weather. They overcome inequalities in width of window frames and are easily adjusted to fit frames that are "out of square." Made Sliding, Twin-Sliding or Hinged, and in any mesh, size or shape desired; cage, basket, circle, Gothic or French top, bow or bull's eye.

SCREEN DOORS—Our Screen Doors are strictly high-grade, made of selected genuine Northern Cork White Pine, Cypress, Quartered Oak, Cherry, Mahogany, etc. Air-seasoned and kiln-dried. Made $1\frac{1}{8}$ -inch thick and finished to harmonize with the surroundings.

E-Z Slide Metal-bearing Wood-frame Fly Screens are securely framed together by **interlocking, concealed mortise-and-tenon joints**. Wire cloth is attached to the screen frame by means of a groove and lockstrip that keeps it tight, and the holding power is equal to the wire itself.

GUIDES or SLIDES—Are made of Zinc metal, extending the full height of the window.

WIRE CLOTH—CINMANCO Brand genuine Bronze-wire Cloth, antique finish, in 14, 16 or 18 mesh; or Galvanized Enameled Black 14-mesh Wire Cloth.

INSTALLATION—A book containing full instructions for installations and complete forms for measurements by intending purchasers will be mailed upon request. Any carpenter can readily measure and install our Cinmanco Fly Screens.

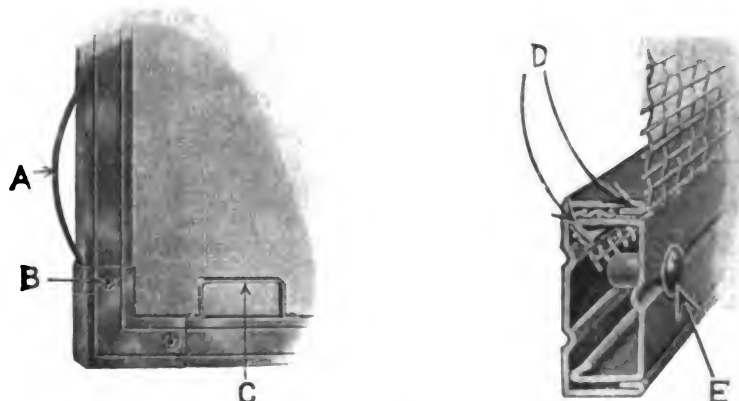
FREIGHT—We pay the freight to any point in the United States.

SERVICE—Our experience and knowledge is at your service upon request.

ESTIMATES—Are cheerfully submitted by our agents or direct from factory.

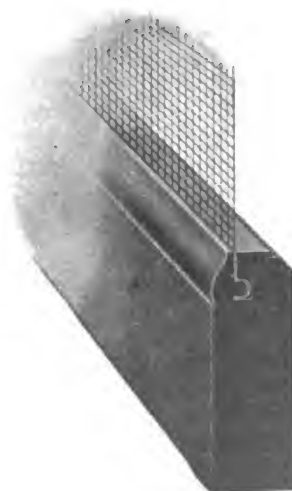
GUARANTEE—All our Rewirable Metal and Wood Frame Fly Screens are *guaranteed* to be made of the highest-grade materials. Any part of our Fly Screens found defective in manufacture will be replaced without further expense to the purchaser.

RESPONSIBILITY—We refer to any Bank in Cincinnati.



CONSTRUCTION OF CINMANCO FLY SCREENS

A—represents detachable spring for holding screen in place. B—strong, ornamental frame, with reinforced corners. C—stationary bronze lift; always out of the way. D—shows method of securing wire cloth; held by rounded corners; do not cut the cloth; forming a perfect water shed; grips the cloth firmly; prevents sagging. E—open rivet (or screw) easily removed for re-wiring.



CROSS SECTION SHOWING CONSTRUCTION OF E-Z SLIDE WOOD-FRAME SCREENS



SCREEN DOOR NO. 10

Booklet and Samples on request.

"A.E.C." SYSTEMS

Jamestown Window Screen Company

Manufacturers of
Custom-Made Insect Screens

RIVER STREET
JAMESTOWN, N. Y.

PRODUCTS—WINDOW, DOOR AND PORCH SCREENS; ROLLER SCREENS

DESCRIPTION—We manufacture a complete line of Window, Door and Porch Screens in regular and special shapes and sizes. All our screens are of the best bronze or steel wire cloth, with wood or metal frame construction, adapted for various purposes. **All screens are made to order only.**

CONSTRUCTION OF WOODEN SCREENS—Our wooden window screen frames are mortised and tenoned together, and door screen frames either mortised and tenoned together or doweled.

On both the window and door screens the wire cloth is drawn taut and held firmly in its place by a **tongued molding**, thus insuring that each strand of wire shall be securely fastened all around the frame.

All full-size of window screens are *hung*, either from the top or side of window frame, to facilitate cleaning the outside of the window without removing the screen. All half-size window screens either swing from the top of the window frame or slide on wood or metal runners placed at each side. All door screens are hung on loose-pin butts and are protected at the bottom by grilles, making a sightly and practical door screen. These grilles are made in special designs suitable for this purpose.

CONSTRUCTION OF METAL SCREENS—Our metal screen frames are **tubular in construction**, the wire cloth being firmly held taut in a channel at the edges. The method of fastening facilitates the rewiring of the screen in case the cloth should become punctured. Our metal screens are made of bronze or galvanized steel, with a baked enamel finish as a preservative coating to prevent rust and resist other injurious climatic influences. Metal screen doors may be painted to match the trim or outside woodwork of the building, or may be *grained* to correctly imitate any natural wood finish desired.

HARDWARE—We carry a complete line of all the necessary window- and door-screen Hardware required to erect and completely operate all our screens. Any finish desired may be had.

"A.B.C." SYSTEMS

TO ARCHITECTS—We will gladly send specifications on wire screens for any class of buildings when requested, or furnish information regarding any wire screen problem. We shall be pleased to submit our figures for furnishing, or furnishing and erecting, wire screens according to the specifications sent us.

We have agents throughout the country, and to localities where we have no agent we will send our expert to measure the openings and give full information regarding our screens.

You will find it of advantage to write us before awarding your wire-screen contract.

TO CONTRACTORS—We will figure with you where screens are specified. We make a specialty of government work, having equipped many buildings throughout the country.

If you are promoters, doing a building and selling business, we shall be pleased to quote you our agents' prices on all styles of screens.

DELIVERY—We have equipped our plant with the most up-to-date machinery, and during the rush season we run night and day to meet the demands of our patrons. All orders receive our careful attention, eliminating delay; accuracy of work and promptness of delivery are the main features of our business. Date of delivery is sometimes of prime importance when there is question of placing a large order.

REFERENCES—Our past performances are our best references. Below we give a few of our recent contracts for the United States Government:

For the Treasury Department:
Post Office, Elizabeth, N. J.
Post Office, Manchester, Va.
Post Office and Court House, London, Ky.
Post Office and Court House, Owensboro, Ky.
Post Office and Court House, Gainesville, Fla.
For the Navy Department:
Naval Hospital, North Chicago, Ill.
For the Quartermaster General's Department:
Thirteen Buildings at Fort Missoula, Mont.
For the Marine Corps:
Marine Corps and Rifle Range, Winthrop, Md.

Also a large amount of work for State and County Hospitals throughout the country, furnished complete.

Monarch Metal Weather Strip Co.

Manufacturers of

Metal Weatherstrips for Windows and Doors

4121-23 FOREST PARK BOULEVARD

ST. LOUIS, MO.

LICENSEES IN ALL CITIES OF UNITED STATES AND CANADA

PRODUCTS—MONARCH ALL - METAL WEATHER-STRIP EQUIPMENT IN SOLID ZINC, BRONZE AND COPPER; ALSO ROLLING MACHINE PRODUCTS

SERVICES—Contractors for the installation of Monarch Metal Weatherstrips on windows and doors of every kind, shape and condition, including Special Form Strips, in new buildings and old.

Testing and Heating Engineers on window and door leakage and its effect on heating and ventilation.



TRADE MARK

ADVANTAGES—1. Reduce radiating surface 25 per cent in new buildings. 2. Save 20 to 40 per cent of fuel in old buildings. 3. Keep out dust, soot and annoying noises. 4. Prevent decay of window frame and sash. 5. Last for 25 years without cost for repairs. 6. Make double windows unnecessary. 7. Not injured in efficiency by swelling, shrinkage or warping of sash. 8. Efficiency not injured by sash-cord grooves. 9. Sash can be removed without taking out the weatherstrips. 10. Not easily bent or injured while in window. 11. Stop rattling of windows. 12. By keeping out cold air and dust, save housecleaning, furnishings, sickness and doctor bills.

DESCRIPTION—DOUBLE-HUNG WINDOWS — Side Strips consist of a metal tube sliding within a tube, insuring durability and no leakage. Tubular shape means strength. Protected from injury by their position in the channel of the window. Head and Sill Strips not easily bent and grooves lined to prevent leakage. Meeting Rail Strip, interlocking and flexible, never fails to interlock, no matter how the sash are warped apart. The female member is inverted so that it does not catch moisture and freeze fast; has at least two points of contact so that it is efficient even if the sash are not tightly closed.

CASEMENT WINDOWS AND DOORS—Flexible interlocking strip of bronze and copper, or spring bronze strip hemmed on both edges. Interlocking strip automatically adjusts itself to the width of the crevice. Hemmed spring bronze strip prevents leakage between nail heads and stops "singing" in a high wind. It has no sharp angles to make it split.

METAL FRAMES AND SASH—Monarch Equipment applies the same principles of construction between the contacting points for metal frame windows as for wooden windows, and is positively the only equipment which is absolutely efficient and permanent.

Every known make of metal-frame windows are being successfully equipped.

SPECIAL DOOR BOTTOM—It is positively indestructible; the only water-tight door bottom made. The solid brass plate, A, $\frac{1}{8}$ " thick, is placed on the threshold. This protects against wear and forms a straight line for the contact of the spring bronze strip, C. The loose edge of the spring bronze is protected from

catching on rugs or other objects by the guard strip, B. When the door is closed, the spring bronze strip, C, contacts with the top of the brass plate, A, and makes an air-tight and water-tight line along the entire bottom of the door. The roller, D, prevents sagging of the door and holds the parts permanently in their proper position.

SPECIFICATION—Double-Hung Windows shall be equipped at sides, head and sill, with zinc, metal sliding in metal at the sides. The grooves for the head and sill strip to be lined. Meeting rails to be equipped with interlocking weatherstrips of bronze and copper, same to have at least two points of contact.

Casement Windows and Doors shall be equipped at the sides and top with flexible interlocking strips of bronze and copper, or with spring bronze having both edges hemmed. Where zinc is used, it shall be No. 9, cut across the grain to prevent splitting. Where bronze is used, it shall be not less than No. 31-B. & S. Gauge, $\frac{3}{4}$ spring hard. Where copper is used, it shall be 12-ounce cold rolled, patent leveled. All zinc strips shall be nailed not more than three inches apart, with No. 18 x $\frac{5}{8}$ flat head barbed needle-point nails, tinned to prevent rusting.

All weatherstrips to be acceptable must be tested by a competent heating engineer with apparatus similar to that designed by the Monarch Metal Weather Strip Co. of St. Louis. (See their catalog.) No weatherstrips will be accepted that show a leakage of more than one-half of a cubic foot of air per minute for each lineal foot of opening around the sash, with wind velocity of 30 miles per hour. Weatherstrips are to be guaranteed by the Manufacturer and are to be kept in repair for a period of not less than five years.

INSTALLATION—All Monarch equipment is installed by our own expert mechanics under our personal supervision.

This is why we guarantee results. Monarch mechanics are accustomed to working in fine homes and occasion no interference with surroundings or annoyance to occupants. We follow this policy believing that the growth of our business depends on satisfied customers.

GUARANTEE—We will, upon request, furnish a written guarantee covering the above statements.

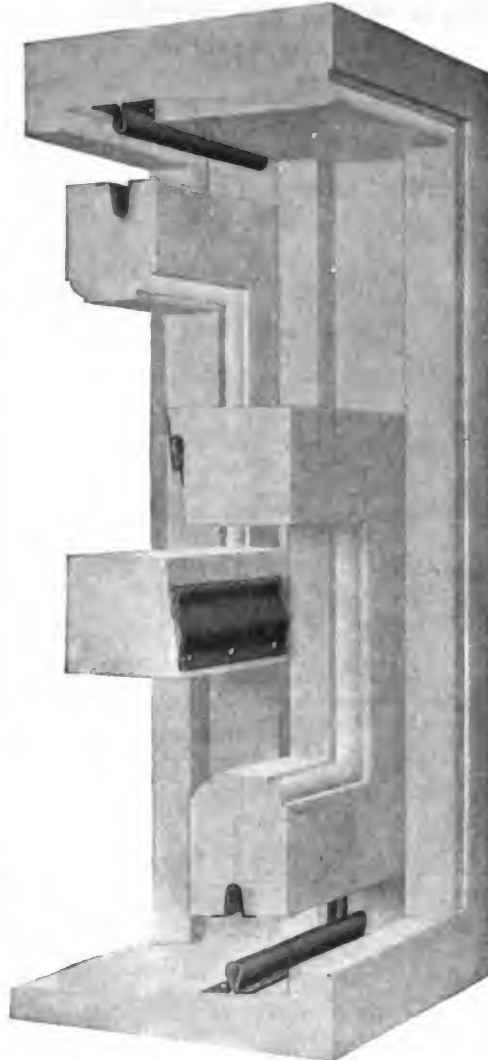
ESTIMATES AND SAMPLES—Estimates of cost with samples of strip or working models will be furnished promptly upon application to the Home Office.

CATALOGS—We issue a special catalog for Architects and Heating Engineers. This will also be mailed, on request, with list of users in any section desired.

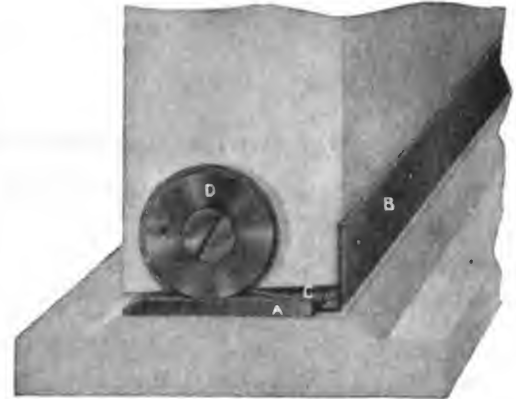
DETAILS OF MONARCH METAL WEATHER STRIP



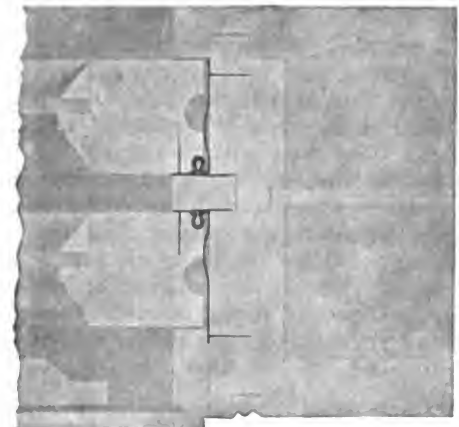
SECTION THROUGH BOX-HEAD OR SLIP-HEAD WINDOW



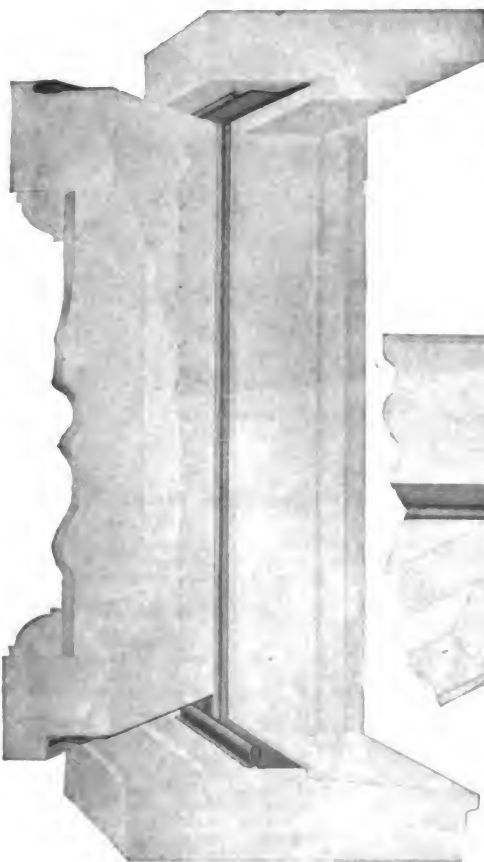
VERTICAL SECTION THROUGH DOUBLE-HUNG WINDOW



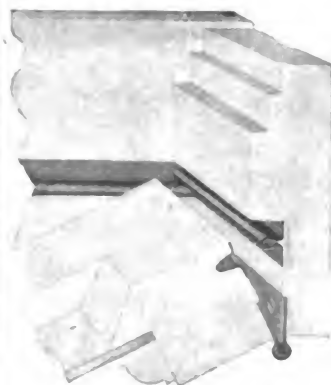
SECTION SHOWING SPECIAL DOOR BOTTOM EQUIPMENT



SECTION THROUGH JAMB OF DOUBLE-HUNG WINDOW



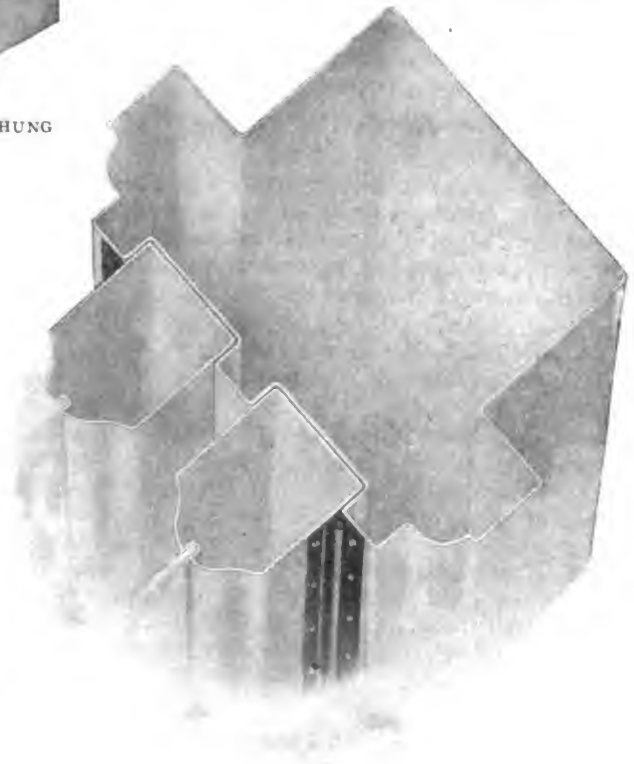
SECTION SHOWING SPECIAL EQUIPMENT FOR CASEMENT WINDOW, OPENING IN



SILL STRIP FOR METAL SASH



SIDE STRIP FOR METAL SASH



SECTION THROUGH BOX OR SIDE OF DOUBLE-HUNG WINDOW, METAL SASH AND FRAME

"A.B.C." SYSTEMS

The Pitt Balance Door Company

136-138 WEST 24th STREET
NEW YORK

For our Catalog on Grilles, Gates, Ornamental Iron Work see Section 15A, Cat. 8

For our Catalog on Balance Doors, Receding Doors, Telephone Booth Doors see Section 21C, Cat. 1

PRODUCT—"CHAMPION" METAL WEATHERSTRIPS for Windows and Doors

FOR WINDOWS—Installed on both sides, top and bottom and across the meeting rails of a double-hung window. It covers and protects the parting bead. Two screws hold the side strips in place throughout their entire length. When replacing a pane of glass, or a sash cord, it may easily be removed and reset. The strip enters the rabbet in which the parting bead is held, thus always assuring the correct distance between the spline and the parting bead, as shown in cuts, preventing jamming or sticking of the sash. Our sill piece is reinforced with a **galvanized steel spline** folded within the zinc, as shown in Fig. A.

We furnish this weatherstrip in either brass, bronze or zinc metal. No detail drawing except on **metal-covered windows** is required where "Champion" Metal Strip is specified. Further particulars, prices, etc., will be furnished on application.

On a casement window the "Champion" Weatherstrip is equally effective.

We beg to call the Architect's attention particularly to the work done on casement windows **opening in**. These are guaranteed tight absolutely; and when made according to our details and equipped with our system, there will be no water driven through casement windows opening in.

GUARANTEE—We guarantee the "Champion" Metal Weatherstrip to prevent all leakage of water, wind or drifting snow.

FOR DOORS—FIGS. E AND F—The strip is inserted in a groove made in the bottom of the door and is therefore invisible. When the door is shut the strip is forced down by means of plunger "B," and entirely fills the space between door and threshold. By means of the screw "A," it can be adjusted to any amount of drop, and to fit uneven places in the sill. When door opens the strip springs up flush with the bottom. All the metal parts are made of non-rustable material and the hard felt (one-quarter inch thick) is not affected by moths or moisture.

We also manufacture an especially serviceable **spring side strip** (Fig. F), to be used where the door warps or springs away from the jamb. It follows the movement of the door, always resting against it and keeping it tight, and is the only side strip known to us that is made on an automatic principle.

"A.B.C." SYSTEMS



FIG. B.—"CHAMPION" METAL WEATHERSTRIP ON LOWER SASH OF DOUBLE-HUNG WINDOW

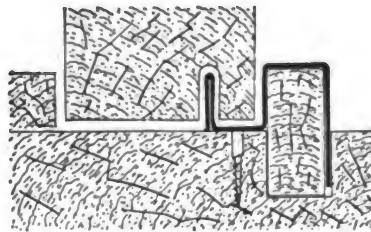


FIG. C.—HORIZONTAL SECTION OF WINDOW JAMB

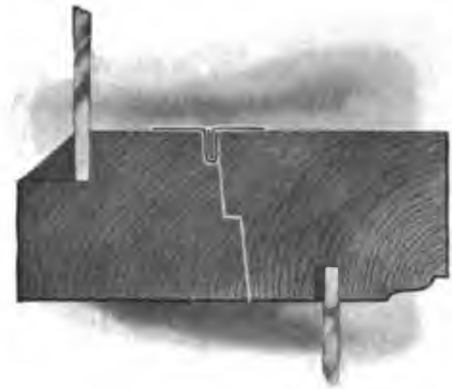


FIG. D.—"CHAMPION" METAL WEATHERSTRIP FOR MEETING RAILS OF DOUBLE-HUNG WINDOW



FIG. A.—"CHAMPION" METAL SILL PIECE



FIG. F.—"CHAMPION" SPRING SIDE STRIP FOR DOORS



FIG. E.—"NO DUST" BOTTOM DOOR STRIP

REFERENCES—Buildings on which "Champion Metal Weather Strip" has been installed:

Importers' & Traders' National Bank, New York, N. Y.
F. O. Spedden, residence, Tuxedo, N. Y.
Daniel H. Cox, residence, Woodmere, L. I.
Gould's Castle, Sands Point, L. I.
Tuxedo Park School, Tuxedo, N. Y.
Hotel Astor Addition, New York, N. Y.
Clearfield Apartment House, 103rd St. & Riverside Drive, New York, N. Y.
Chas. A. Coffin, residence, Locust Valley, L. I.
Thomas Hastings, residence, Roslyn, L. I.
Trinity School, New York, N. Y.
W. V. S. Thorne, residence & garage, Morristown, N. J.
Manville Building, 41st Street & Madison Avenue, New York, N. Y.
Professional Building, 38th Street & Madison Avenue, New York, N. Y.
Dr. H. B. Baruch, residence, Great Neck, L. I.

Chas. Lane Poor, residence, 35 East 69th Street, New York, N. Y.
Miss Laura Robinson, residence, Greenwich, Ct.
W. W. Fuller, residence, Top Notch, Ossining, N. Y.
S. C. Millett, residence, Irvington, N. Y.
Col. J. R. De Lamar, residence, Glen Cove, L. I.
P. H. B. Frelinghuysen, residence, Morristown, N. J.
E. M. Kohlmaat, residence, 25 East 73rd Street, New York, N. Y.
E. N. Blanke, residence, Greenwich, Ct.
Jas. P. Logan, residence, Great Neck, L. I.
Dr. H. L. Sadler, residence, Carlisle, Pa.
L. S. Sadler, residence, Carlisle, Pa.
Forsyth Wicks, residence, Tuxedo, N. Y.
Joseph Stuart, residence, Rye, N. Y.
Inwood School, Inwood, N. Y.
Effingham Lawrence, residence, Cold Spring Harbor, N. Y.
Village School, Tuxedo Park, N. Y.

CLASSIFICATION PAGE OF
SECTION 22

Store Front Construction of Special Design

Section Synopsis

Store-Front and Show-Window Work, in wood and metal; Patent Bars, Glass Fasteners, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX			Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers						
REGULAR CLASSIFICATION					1 to 5	6 to 10	11 to 15	16 to 20	21 to 30			1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		
	1	Glass fasteners, or clips Patent systems of construction:—																
	2	All-metal																
	3	Combination wood and metal																
SPECIAL CLASSIFICATION																		
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.																		
	21	Metal moldings, cold-rolled and drawn (S. 16 A)																

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30
			</			

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30
Adjustable Show Window Co. Elizabeth, N. J.	3											Pittsburgh Plate Glass Co.. Pittsburgh, Pa.	2				
						Fels, Noah..... New York, N. Y.	2 3										
Brandenberger & Co..... Baltimore, Md.	2 3											Thorne Holdfast Metal Bar Co. Troy, N. Y.	1 3				
						Hester Mfg. Co..... Chicago, Ill.	2 3										
Coulson & Co., J. W..... Columbus, Ohio	3																
						Mesker & Co., Geo. L. Evansville, Ind.	1 2 3					Voltz Mfg. Co..... St. Joseph, Mo.	2				
Detroit Show Case Co. Detroit, Mich.	2																
						Perfection Metal Bar Co.. Cleveland, Ohio	1 2					Zouri Mfg. Co. St. Louis, Mo.	3				

Kawneer Manufacturing Co.

Francis J. Plym, President

Metal Store Fronts and Architectural Metal Moldings

FACTORY AND GENERAL OFFICES
NILES, MICH.

Branch Offices

CHICAGO, ILL.
NEW YORK, N. Y.
KANSAS CITY, MO.
DETROIT, MICH.
ST. LOUIS, MO.
PITTSBURGH, PA.
ATLANTA, GA.
PHILADELPHIA, PA.

MILWAUKEE, WIS.
MINNEAPOLIS, MINN.
WASHINGTON, D. C.
DES MOINES, IOWA
SAN FRANCISCO, CAL.
PORTLAND, ORE.
SEATTLE, WASH.
SPOKANE, WASH.

LOS ANGELES, CAL.
SALT LAKE CITY, UTAH
LINCOLN, NEB.
SIOUX CITY, IOWA
SYRACUSE, N. Y.
INDIANAPOLIS, IND.
DENVER, COLO.
CINCINNATI, OHIO

FT. WORTH, TEX.
WACO, TEX.
HOUSTON, TEX.
EL PASO, TEX.
ALBUQUERQUE, N. M.
VICTORIA, B. C.
VANCOUVER, B. C.
WINNIPEG, MAN.

PRODUCTS—Manufacturers of "KAWNEER" STORE FRONTS, in solid Copper, Brass, Bronze and Aluminum; "KAWNEER" ARCHITECTURAL METAL MOLDINGS, in cold-rolled and drawn Copper, Brass, Bronze, Aluminum and Steel

Kawneer
STORE FRONTS

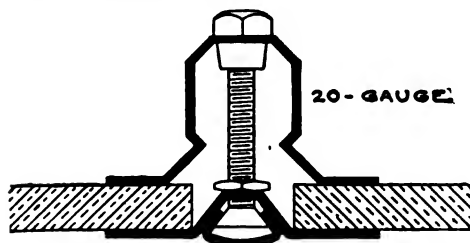
DESCRIPTION—"KAWNEER" Store Fronts are made entirely of either solid copper, brass, bronze or aluminum; will not rot, rust or warp, nor do they require painting.

An Architects' Booklet, showing full-size details of the various members, together with a plain description of each, will gladly be sent upon request.

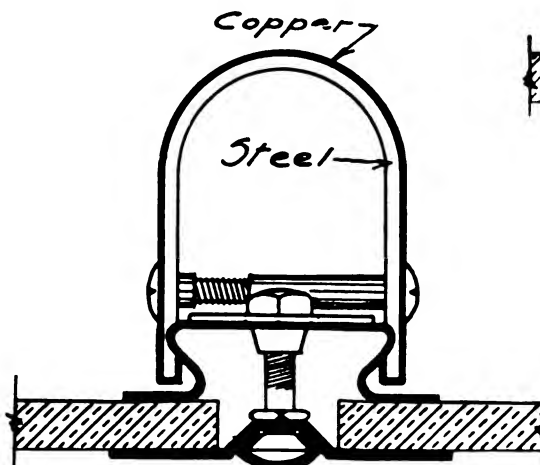
Kawneer Store Fronts are complete from sidewalk to I-Beam, with various types of bulkhead constructions, sash, transom bars, jamb moldings, corner and division bars to meet every condition. All glass is held by a spring friction grip (not a line grip), that protects. Division Bars No. 21B and No. 21C, as shown herewith, are reinforced by a steel U which insures ample horizontal as well as lateral strength.

HOLLOW METAL ARCHITECTURAL MOLDINGS—We furnish these in copper, brass, bronze and aluminum, either in our standard shapes or in accordance with architects' details.

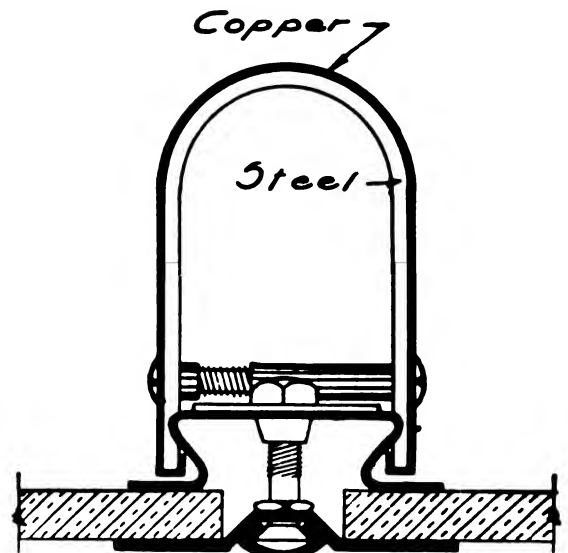
ALL KAWNEER moldings are cold-rolled and drawn.



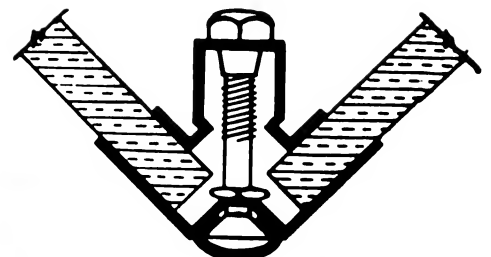
NO. 14-A DIVISION BAR, FULL SIZE



NO. 21-B DIVISION BAR, FULL SIZE



NO. 21-C DIVISION BAR, FULL SIZE



NO. 5 CORNER BAR, FULL SIZE



NO. 30 METAL SASH, $\frac{3}{4}$ FULL SIZE

NO. 30 METAL SASH—With KAWNEER No. 30 Sash the ventilation and drainage of show windows can be regulated.

Turn on the ventilation in Winter, and in Summer shut the air off dust-tight.

Notice the small V-shaped slide built in the gutter (shown extended).

CLASSIFICATION PAGE OF

SECTION 23

Horticultural Buildings and Equipment

Section Synopsis

Greenhouses, Conservatories, Patent Systems of Construction; Heating and Ventilation Design; Special Boilers; Slate Benches; Sash-Operating Devices, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX		Cat. No.		Manufacturers having Catalog data in this Section		Sub-Index Numbers					SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business	
REGULAR CLASSIFICATION						1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		
1	Benches and other fittings											
2	Greenhouse and conservatory design and construction											
3	Greenhouse hot-water boilers											
4	Heating and ventilation											
5	Sash operating devices, <i>special</i>											
SPECIAL CLASSIFICATION												
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.												
21	Heating and ventilating apparatus for general purposes, <i>steam, hot-water, vacuum</i> (S. 29 B)											
1	Payne, John A. Jersey City, N. J.					1 2 3 4 5				21		
											Dearborn Hardware Mfg. Co. S. 19 A, Cat. 5 (Gear sash operators)	
											Pierce, Butler & Pierce Mfg. Co. S. 29 B, Cat. 5 (Hot-water greenhouse boilers)	

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30
Bates, Ed. P. Syracuse, N. Y.	3 4																
						Kay Co., W. H. New York, N. Y.	3					North Bangor Slate Co. Bangor, Pa.	1				
Crane Co. Chicago, Ill.	3					Keenan Structural Slate Co. Bangor, Pa.	1					Payson Mfg. Co. Chicago, Ill.	5				
Drouve Co., G. Bridgeport, Conn.	5					Kroeschell Bros. Co. Chicago, Ill.	2 3					Pennsylvania Structural Slate Co. Easton, Pa.	1				
East Bangor Consolidated Slate Co. East Bangor, Pa.	1					Lockland Lumber Co. Lockland, Ohio	2					Pierson U-Bar Co. New York, N. Y.	1 2 3 4 5				
Foley Mfg. Co. Chicago, Ill.	2 4 5					Lord & Burnham Co. New York, N. Y.	1 2 3 4 5					Prox Co., Frank. Terre Haute, Ind.	3				
Foskett & Bishop Co. New Haven, Conn.	4					Lutton, Wm. H. Jersey City, N. J.	2 3 4 5					Stearns Lumber Co., A. T. Boston, Mass.	1 2 5				
Glenn Mfg. Co. St. Charles, Ill.	1					Metropolitan Material Co. Brooklyn, N. Y.	1 2 3 4 5					Sunlight Double-Glass Sash Co. Louisville, Ky.	1 2				
Hitchings & Co. Elizabeth, N. J.	1 2 3 4 5					Meyers Mfg. Co., Fred J. Hamilton, Ohio	1					Woodbury Mill & Lumber Co. Woodbury, N. J.	5				
Howard & Morse. New York, N. Y.	4					Monarch Blackboard & Structural Slate Mfg. Co. Slatington, Pa.	1										
Hower, J. K. Slatington, Pa.	1																
Jacobs & Sons, S. Brooklyn, N. Y.	1 2 3 4 5																

John A. Payne

Designer and Builder of Greenhouses Heating and Ventilating Engineer

Telephones { 1303-J Bergen
337-W Bayonne

260-274 CULVER AVENUE
JERSEY CITY, N. J.

PRODUCTS AND SERVICES—Designers and Builders of the PAYNE "T"-BAR GREENHOUSE and of all kinds of IRON and WOOD-FRAME GREENHOUSES for Palms, Orchids, Ferns, Roses, etc.; GRAPERIES, CONSERVATORIES, SUN PARLORS AND GLASS HOUSES for every Purpose

WATER, STEAM AND VACUUM HEATING AND VENTILATING APPARATUS; All kinds of GREENHOUSE STRUCTURAL MATERIAL AND SASH-OPENING APPARATUS; CYPRESS IRON-FRAME AND CEMENT BENCHES AND BEDS

THE PAYNE DRIPLESS STEEL "T"-BAR CONSTRUCTION—The structural features embodied in The Payne Dripless Steel "T"-Bar Construction are fireproof. Wood is used only in the form of a small bar bolted to the "T"-Bar at frequent intervals. This wood bar forms a bed for the glass, holds same in position and protects it against changes in temperature.

The wood cap also insulates the glass from the iron and preserves the internal heat at that point. This prevents water of condensation forming on the "T"-Bar and ice collecting between it and the glass. The offset of the "T"-Bar from the wood cap (see illustration) provides a channel to carry off the water of condensation. Ample experience has demonstrated that no dripping occurs from the bars.

With this principle of construction it is possible to use curved glass eaves, thus eliminating the heavy members usually employed at that point.

DETAILS—The wood caps are practically exposed on all sides to the air and are easily painted. This ensures the life of the wood. The glass, resting on wood, will not break at line of eaves. The strength of "T"-Bar admits use of glass 24 inches wide or wider, if desired, producing an exceptionally light, strong and durable structure.

INTERIOR FINISH—Iron work is galvanized and finished with aluminum, or painted with lead paint, if preferred. The part of "T"-Bar where wood bar rests is given a heavy coat of lead during erection.

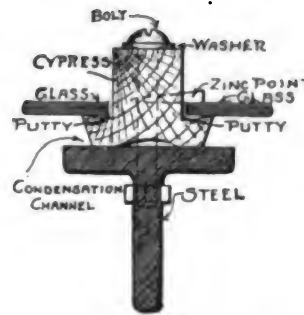
PAYNE FLAT-IRON RAFTER AND COMMERCIAL "T"-BAR CONSTRUCTION—We manufacture all the regular lines of iron-frame construction, also the Commercial "T"-Bar form. This consists of iron "T"-Bar rafters placed about 8'-3" apart and carrying "T"-Bar purlins longitudinally, to which are secured the wood bars that hold the glass.

ADVANTAGES—This system reduces the number of columns without impairing the strength and produces the least shadows. Built either with iron gutters or with our dripless "T"-Bar eaves plate.

NON-FREEZABLE "T"-BAR EAVES PLATE—This plate is of galvanized iron, "T"-Bar section, and has small holes in it (see illustration) to allow the condensation water from the glass to pass outside without the use of small pipes. It eliminates the usual drip from this source on the inside of the house. Conductivity from inner or warm side of "T" prevents the accumulation of ice and snow at the eaves. The small holes are cleaned from either inside or outside.

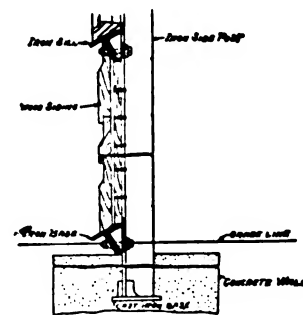
CO-OPERATIVE SERVICES, HEATING—We shall be pleased to co-operate with Architects by giving suggestions on the design and planning of greenhouse ranges, including their heating by any system desired. Estimates from special designs by Architects, covering all required work, promptly furnished. Correspondence solicited.

"A.B.C." SYSTEMS

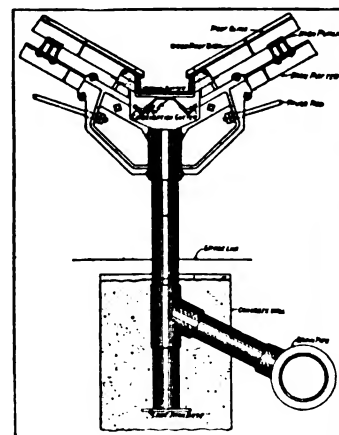


SECTION OF STANDARD "T"-BAR AND WOOD CAP

A hole is punched out of the web of the steel "T" to give room for drawing up the bolt. Full size of "T" is $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{4}$ in.

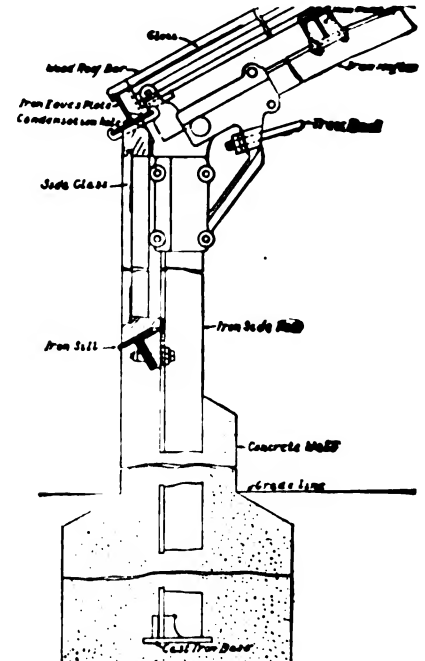


DETAIL SHOWING "T" BASE, "T" SILL, WOOD SIDING



PAYNE DRIPLESS CENTER GUTTER

The structural members serve at same time for roof drainage. Compact and economical where houses adjoin each other.



DETAIL SHOWING "T"-BAR EAVES AND "T"-BAR SILL AND "T" PURLIN AND CONCRETE WALL CONSTRUCTION



SMALL "T"-BAR GREENHOUSE AND WORKROOM



INTERIOR VIEW OF CORNER OF SMALL GREENHOUSE

CLASSIFICATION PAGE OF
SECTION 24

Floor, Wall and Ceiling Tile and Mosaic, and Setting

(Mantel Facings and Hearths see also Section 41)

(Glass Tile see Section 20)

(Rubber and Cork Tile see Section 25)

Section Synopsis

CERAMIC TILE, All Varieties, for walls, floors, mantels, etc., Tile; Ceramic and Marble Mosaic; Venetian Granito Terrazzo for utilitarian and decorative purposes; Sanitary Shapes; Faience Floors; Marble Tile

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX REGULAR CLASSIFICATION		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFER- ENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere ac- cording to their general line of business.
				1 to 8	9 to 16	17 to 24	25 to 32	33 to 48	
1	Ceramic mosaic								
	Ceramic tile:—								
2	Ceiling								
3	Embossed								
4	Enameled								
5	Encaustic								
6	Faience								
7	Floor								
8	Mosaic								
9	Mantel								
10	Porcelain enamel								
11	Relief, high								
12	Single-color, glazed, unglazed								
13	Vitreous, floor								
14	Wall								
15	Window, door and trim								
16	Marble mosaic								
17	Sanitary base, corners, etc.								
18	Tile and mosaic setting, contrac- tors								
19	Venetian granito terrazzo floors								
SPECIAL CLASSIFICATION									
Covers products belonging to other sec- tions. Included in this section because not sufficiently extensive for separate cata- loging in the section to which they belong.									
33	Architectural faience (S. 8 F)								
34	Enameled brick (S. 8 A)								
TRADE NAMES AND BRANDS									
"Aetco," faience tiles									
"Faenza," glazed tiles									
"Ariston," marble tiles, S. 9, Catalog 3									
"Trent," ceramic encaustic tiles, Catalog 1									
		3	American Encaus- tic Tiling Co., Ltd. Zanesville, Ohio	1 2 3 4 5 6 7 8	9 12 13 14	17			
		2	Beaver Falls Art Tile Co. Beaver Falls, Pa.	2 3 4 5 7	12 14 15	17			
		1	Trent Tile Co. Trenton, N. J.	1 2 3 4 5 6 7 8	9 10 11 12 13 14 15	17	33		
									Ariston Marble Co. S. 9, Cat. 3 (Floor, wall and ceil- ing tile)
									Colonial Fireplace Co. S. 41, Cat. 2 (Mantel and general tile setting)
									Jackson & Bro., Ed- win A. S. 41, Cat. 2 (Mantel and general tile setting)
									Tiffany Enameled Brick Co. S. 8 A, Cat. 3 (Enameled wall tile, extra thick)
									Tiffany Studios S. 15 A, Cat. 3 (Marble mosaic)

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48		1 to 8	9 to 16	17 to 24	25 to 32	33 to 48
Alhambra Tile Co..... Newport, Ky.	3 7 8	9 13 14	17			Interior Marble & Tile Co.... Pittsburgh, Pa.			18			Owens Floor & Wall Tile Co., J. B. Zanesville, Ohio	3 4 6 7	11 14	17		
Architectural Tile & Fai- ence Co. Maurer, N. J.	3 7 8	9 13 14	17			Italian Marble Mosaic Co.... Philadelphia, Pa.		16	19			Pardee Works, C..... Perth Amboy, N. J.	3 7 8	9 13 14	17		
Cambridge Tile Mfg. Co.... Covington, Ky.	3 7 8	9 13 14	17			Italian Mosaic & Marble Co.. Buffalo, N. Y.		16	19			Robertson Art Tile Co..... Trenton, N. J.	3 7 8	9 13 14	17		
Cassini Mosaic Tile Co..... Cincinnati, Ohio			18 19			McClamrock Mantel Co..... Greensboro, N. C.		16	17 19			Rookwood Pottery Co..... Cincinnati, Ohio	6	12			33
Cumberland & Mulder..... New York, N. Y.	7		18			Matawan Tile Co..... Matawan, N. J.	3 7 8	9 13 14	17			Shipway & Bro., John H.... New York, N. Y.		16			
Dickson Bros..... Jersey City, N. J.	1 3 4 5 6	12 13	17			Mosaic Tile Co..... Anderson, Ind. Zanesville, Ohio	3 7 8	9 13 14	17			Star Encaustic Tile Co..... Pittsburgh, Pa.	3 7 8	9 13 14	17		
Empire Floor Tile Co..... New York, N. Y.	7	9 14				Mueller Mosaic Co..... Trenton, N. J.	6 7 8	9 14				Traitel Marble Co..... New York, N. Y.	1 3 6 7	13 16	18		33
Enfield Pottery & Tile Works Enfield, Pa.	7 8	12 14				National Tile Co..... Anderson, Ind.	3 7 8	9 13 14	17			U. S. Encaustic Tile Works.. Indianapolis, Ind.	3 7 8	9 13 14	17		
Evans Marble Co..... Baltimore, Md.		16				Old Bridge Enameled Brick & Tile Co. Old Bridge, N. J.	3 7 8	9 13 14	17			Whitestone Marble Co..... Atlanta, Ga.			19		
Grueby Faience & Tile Co... Boston, Mass.	3 7 8	9 13 14	17														

Trent Tile Company

Manufacturers of
Ceramic Tiles of Every Description

Office and Works
TRENTON, N. J.

NEW YORK CITY DISPLAY ROOM, No. 1161 Broadway, near 97th Street

PRODUCTS—CRYSTALS, SEALING WAX REDS, RADIEUX, "DELLA ROBBIA" ENAMELED AND MAT-GLAZED TILE in all Colors and Textures, in Plain and Modeled Surfaces, for Interior and Exterior Use. Weather-resisting Glazes and Colors a Specialty

ARCHITECTURAL FAIENCE, for Mantels, Wainscotings, etc., made from Distinctive Designs

WHITE WALL TILE AND TRIMMERS in all Sizes and Shapes in Porcelain Enamel, No. 1354; CERAMIC MOSAICS AND VITREOUS FLOOR TILE, in Various Colors, Shapes and Sizes

IDENTIFICATION—All our tile are branded with the trade mark "TRENT," and they should be so specified to avoid possibility of substitution. To insure the use of our Porcelain Enamel the specifications should definitely call for "Porcelain Enamel No. 1354, made by the Trent Tile Company."

QUALITY—All our tile are burned at a temperature not less than 2500° F., making them absolutely proof against disintegration by fire. They are impervious to moisture. Their colors are permanent. Trent tile are the most durable of the many varieties of floor coverings.

PORCELAIN ENAMEL No. 1354—Particular attention is directed to this glaze or Enamel, it being the nearest approach to a malleable glaze thus far obtained, the surface not being either bright or dull but midway between. Examination of tile installations in which this enamel has been employed will demonstrate its remarkable freedom from crazing, and its property of not holding or retaining dust. It is, consequently, easily cleaned and a product of the highest sanitary value.

THE USE OF COLOR GLAZES—We earnestly advocate the use of Colored Glazes for Bath Rooms in residences, believing that color adds a charm and artistic elegance to the room which cannot be obtained by the use of White Wall Tile. In Wainscotings, also, colored tile give to a structure a distinctive and inviting appearance. The unlimited range of color effects possible, to-

COMPARISON OF BURNT CLAY TILES

The eloquent testimony of history to the durability of burnt clay products is well known. They are not only fireproof but resistant to disintegration by fire. Likewise they resist, even when unglazed, moisture and temperature influences for centuries. When covered with a good glaze, burnt tile are absolutely impervious to moisture, grease, alkalies and most acids.

Marble tile, mosaic and terrazzo, glass tile and rubber tile, all have merits, but when cost, beauty and durability are considered together, burnt tile easily carries off the palm.

It is opportune, therefore, in perfect fairness, to state what are the defects of these competitors of clay tile:

MARBLE is splendidly adapted for floor tile as far as color and pattern effect are concerned, but is too soft for places subject to much traffic. Shoe nails scratch it and soon wear deep indentations at places where there is much standing. In wainscoting, toilet-room linings, etc., this softness allows its disfigurement by lead-pencil marks. Marble, being porous, absorbs moisture and septic matter readily; it is, therefore, not nearly as sanitary as burnt clay tile.

MARBLE MOSAIC participates in all the defects above stated for marble. In addition, it almost invariably cracks in long zigzag lines across a floor. This is mainly due to the unequal shrinkage as between the lime-and-cement mortar bed and the mosaic floor.

Ceramic mosaic, being laid in pure Portland cement mortar, is bedded firm and level while the Portland is setting. Another advantage of Ceramic Mosaic is its greater range of color combinations.

MARBLE TERRAZZO cracks the same as marble mosaic, and for the same reasons. On account of the large area of cement surface

together with the variations of the tones of color created by fire, using the tile as they come from the Potter's Kiln, produce that rich yet soft harmony of color that is distinctive of burnt tile and not found in any of the rare marbles or stones.

THE USE OF VITREOUS FLOOR TILE—We do not advise the use of vitreous floor tile exceeding in size 4" x 4", and when used of this size we recommend that they be laid with a cement joint of at least 1/4" wide.

DESIGNS AND CO-OPERATION—Original designs or designs from suggestions will be prepared gratuitously, for the approval of architects and decorators, for any scheme of decoration in tile, by our efficient staff of artists, all of whom are graduates of the Ecole des Beaux Arts in Paris and specialists in tile work.

In the execution of architects' and decorators' designs it will be our earnest effort to realize the full possibilities of the effects sought in the designs.

CAUTION—The greatest care should be exercised in tile installations to secure a proper foundation for their application. Nothing so much militates against the perfect tile-covered floor, wall, partition or ceiling as an unsuitable understructure. On application, we shall be glad to offer the fullest directions for preparing any surface to be covered with any of the numerous varieties of tile we make.

NOTABLE EXAMPLES OF TRENT TILE INSTALLATIONS

Union Passenger Station, Tampa, Fla.	McAlpin Hotel, New York City
Colored Wainscoting	Wall Tile Porcelain Enamel No. 1354
Rockefeller Institute Medical Research,	Wanamaker Store, Philadelphia, Pa.
New York City	Wall Tile Porcelain Enamel No. 1354
Wall Tile Porcelain No. 1354	St. Luke's Hospital, New York City
Morocco Temple (Shriners), Jacksonville,	Wall Tile Porcelain Enamel No. 1354
Fla.	Count Kagawa Residence, Chamberlain to
Walls and Floors Ceramic Mosaic	the Empress, Tokio, Japan
998 5th Ave. Apartment House, New	Floors Ceramic Mosaics
York City	Union Oil Building, Los Angeles, Cal.
Wall Tile Porcelain Enamel No. 1354	Vitreous Floor Tile

WITH THOSE OF OTHER MATERIALS

these floors soon wear unevenly and become "pitted," absorbing dirt and making thorough cleaning impossible.

GLASS WALL AND CEILING TILE are undoubtedly sanitary, but they do not adhere well to the mortar because glass is too dense—has no suction—as it is technically expressed. On account of the difference in expansion between the glass tile and the mortar the tiles are very apt to crack. This increases their liability to fall and the danger to persons from their sharp-cutting edges. The small knobs, anchor bits, put on the back of glass tile have not succeeded to make them hold any better.

RUBBER TILE are impervious to moisture and agreeable to walk upon. But the coloring matter mixed with the rubber, to imitate the effect of ceramic tiles, largely destroys the rubber quality. The numerous joints, which are not filled with any kind of cement, allow wet to work down upon the understructure. This soon produces an unsanitary condition, and if the understructure is wood, will rot it.

Rubber tile are not fireproof; they smell offensively in warm weather; grease is destructive to them. For the reasons stated they are not desirable for kitchens or any floors where there is liable to be much wet, or frequent washing up required.

As for **BURNT CLAY TILES** the most that it has been possible to say against their use is the occasional coming loose of a tile on floor or wall. However, this is not due to any inherent defect in material or manufacture, but entirely to bad setting by the tile contractor. No clay tile properly set will ever "come off." Plain attention to very simple precautions in preparing the understructure for tile and in setting them will entirely obviate this difficulty.

Beaver Falls Art Tile Company

Manufacturers of Enamel, Wall and Trim Tile

BEAVER FALLS, PA.

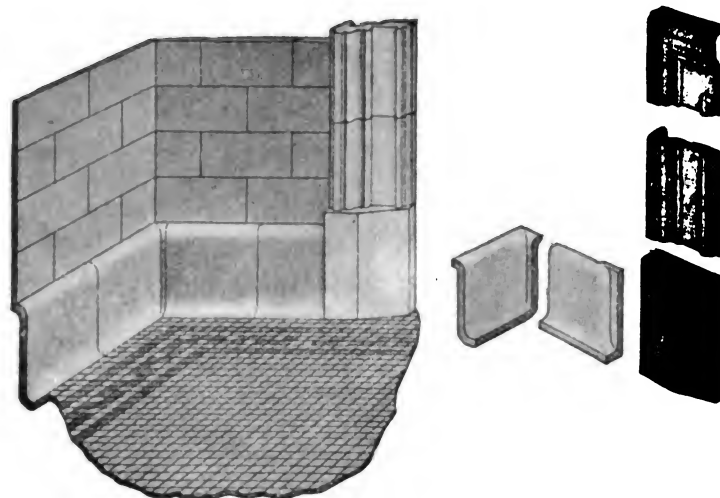
NEW YORK OFFICE, 155 West 24th Street

CHICAGO OFFICE, 21 E. Van Buren Street, Room 700

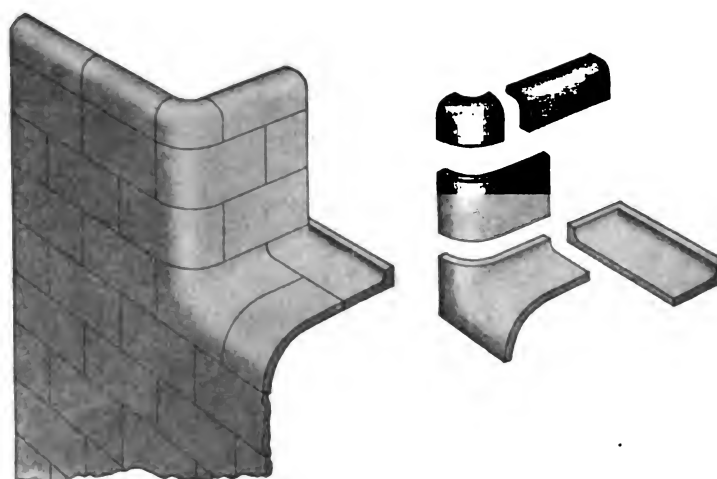
PRODUCTS—ENAMEL AND WALL TILES; BASE, CAP, COVE, BEAD, DOOR AND WINDOW TRIM, PLINTH, COMBINATION ANGLES AND EMBOSSED BORDERS

NOTE—All our tiles are of the highest quality of manufacture and finish, and are furnished in white or in colored glazes. These illustrations show some of the sanitary shapes which we manufacture.

CATALOG—Write for catalog showing our full line of Embossed Borders and Trim Tiles.



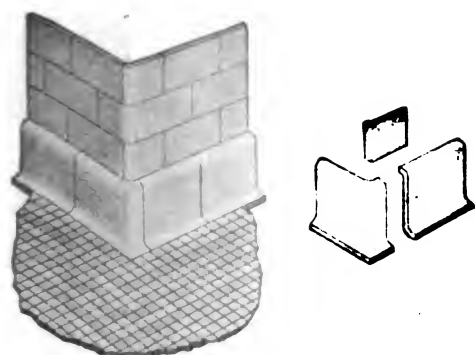
DOOR TRIM



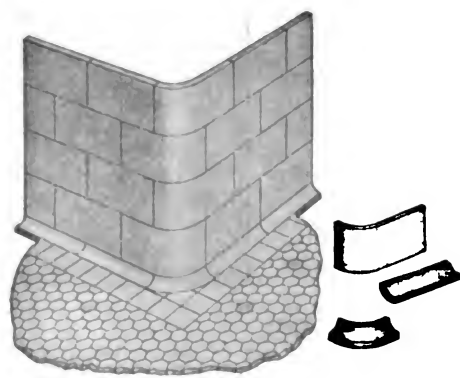
WINDOW JAMB AND SILL



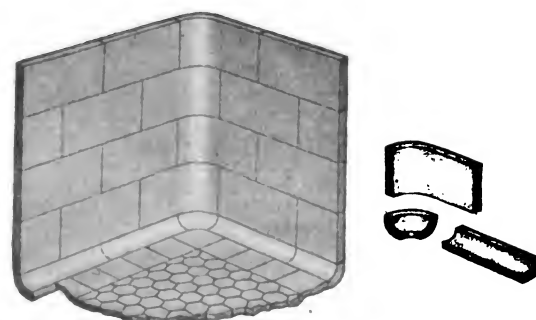
EMBOSSED BORDERS



EXTERNAL CORNER AND SANITARY BASE



EXTERNAL CORNER AND COVE



INTERNAL CORNER AND COVE

"A.E.C." SYSTEMS

American Encaustic Tiling Company, Ltd.

Manufacturers of

Clay Tiles for All Purposes

New York Office and Showrooms

16 EAST 40th STREET
NEW YORK, N. Y.

COMMUNICATIONS FROM POINTS
OUTSIDE OF NEW YORK CITY
AND VICINITY SHOULD
BE ADDRESSED TO
ZANESVILLE,
OHIO

Factories and General Offices
ZANESVILLE, OHIO

PRODUCTS—CLAY FLOOR TILES, "AETCO" WALL TILES, ENAMELED TILES, EMBOSSED TILES, "AETCO" FAIENCE AND DECORATIVE TILES, meeting all requirements for decorative harmony and utility in construction. Special attention is given to the production of Clay Tiles to meet particular sanitary requirements in Hospitals, Laboratories, etc.

CLASSIFICATION AS TO PURPOSES USED—

FLOOR TILES, UNGLAZED.

STANDARD TILES—Made in all standard shapes and sizes $\frac{1}{2}$ " thick in the following colors: Buff, Salmon, Light Gray, Dark Gray, Red, Chocolate and Black.

HYDRAULIC TILES—For porch floors, engine rooms, etc. Made in sizes 5" x 10", 6" x 6", 6" x 3" and $4\frac{1}{4}$ " x $4\frac{1}{4}$ ". All tiles $\frac{21}{32}$ " thick. All sizes in the following colors: Buff, Salmon, Light Gray, Dark Gray, Red, Chocolate and Black.

CORRUGATED PAVING TILES—Tiles 6" x 6" x $\frac{13}{16}$ " thick.

OHIO FLINT VITREOUS PAVING TILES—Tiles 6" x 6", 6" x 3" and $4\frac{1}{4}$ " x $4\frac{1}{4}$ " and $4\frac{1}{4}$ " hexagon, with patent grip back, in the following colors: Pearl Gray, White and Green.

VITRIFIED STANDARD TILES—Made in all standard sizes up to 3" x 3", and in the following colors: Alabaster White, Silver Gray, Celadon, Green Vitreous, Blue-Green, Light Blue, Dark Blue and Pink.

CERAMIC VITRIFIED MOSAIC TILES—Made in the following colors: Alabaster White, Silver Gray, Celadon, Green Vitreous, Blue-Green, Light Blue, Dark Blue, Pink, Buff, Black and Cream.

CERAMIC SEMI-VITREOUS MOSAIC TILES—Made in the following colors: Salmon, Light Gray, Dark Gray, Red, Chocolate.

ZIGZAG MOSAIC TILES—Produced in geometrical tile in shades to correspond and harmonize with Ceramic Mosaic Floor Tiles.

ART MOSAIC HAND CUT TILES—Designs furnished upon application.

WALL TILES.

(Absolutely Guaranteed Against Crazing)

GLAZED—"Aetco," Vented Grip Back, $\frac{3}{8}$ " thick in the following sizes: 6" x 3", 6" x 2", $4\frac{1}{4}$ " x $4\frac{1}{4}$ ", $4\frac{1}{4}$ " x $2\frac{1}{6}$ ". Made $\frac{1}{2}$ " thick in the following sizes: 6" x 6", 9" x 3", 9" x $4\frac{1}{2}$ " and 9" x 6".

GLAZED BRICK—Made 1" thick, size 9" x 3" and 9" x $4\frac{1}{2}$ ", with patent grip back in White Glaze and also Enamel colors on White Body. Bullnoses (for exterior corners) furnished.

FIREPLACE AND WAINSCOTING TILES, ETC.

"AETCO" FAIENCE—GLAZED—Decorative treatment for interiors and exteriors in original designs, textures and colors. A special treatment of the application of tile to mantels, wainscotings, fireplaces, fountains, etc., etc.

ENAMEL—GLAZED—Made in bright Enamel colors; Onyx colors, Marble colors and Matt Glazes.

EMBOSSED—GLAZED—Made in numerous decorations to harmonize with any decorative scheme.

"A.B.C." SYSTEMS

DECORATIVE TILES.

HAND PAINTED—GLAZED—These tiles executed from architects' drawing or from designs furnished to architects by us.

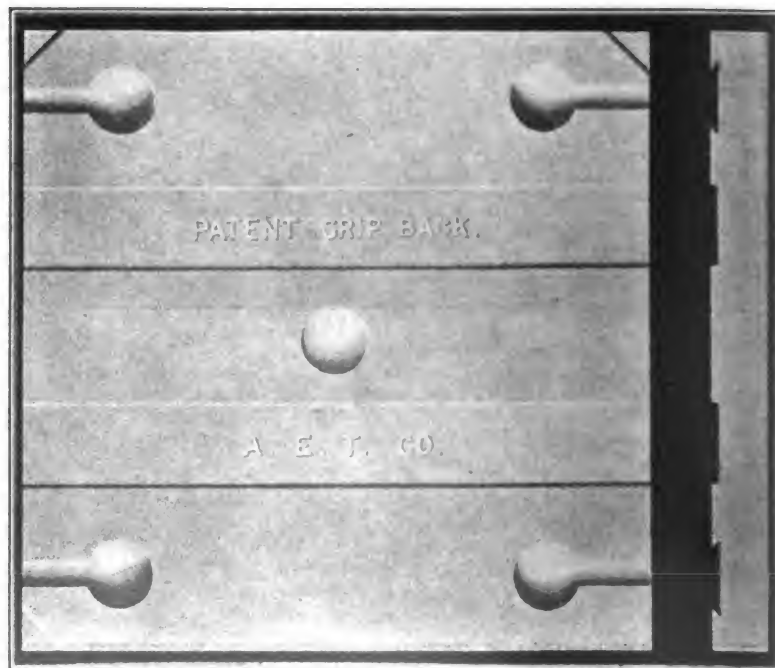
NOTE—Printed and hand-filled tiles furnished if desired.

"FAENZA"—GLAZED—Made in the following sizes: 9" x 9", 9" x $4\frac{1}{2}$ ", 6" x 6" and 6" x 3".

HOW TO SPECIFY—Select from classified list of products, name, size and color of tile desired, and specify, "Made by the American Encaustic Tiling Company, Limited." This will insure satisfactory service and the product desired.

SPECIAL DESIGNS—We are prepared to execute special designs furnished by Architects or will submit and execute special designs in co-operation with Architects.

CO-OPERATION—We desire to co-operate with practitioners wherever our knowledge of the sizes and application of Clay Tiles may be of assistance in producing lasting and effective work.

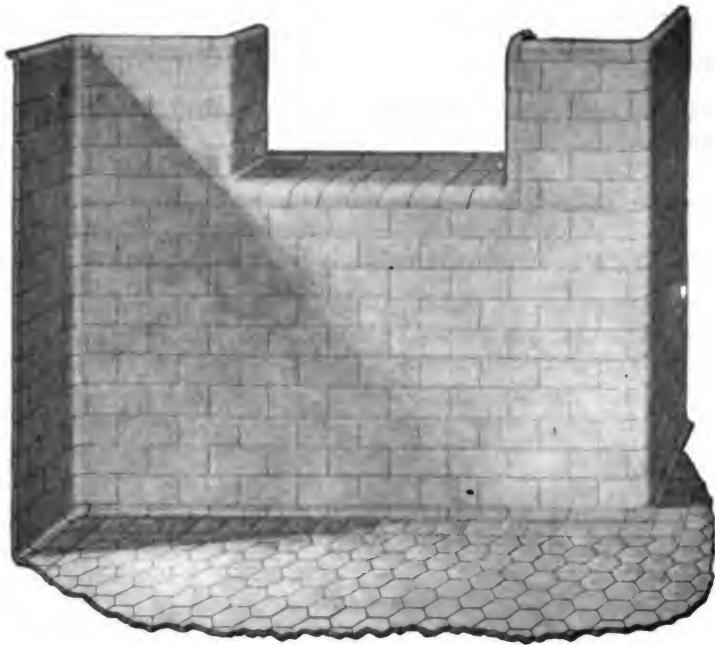


VENTED GRIP BACK WALL TILES

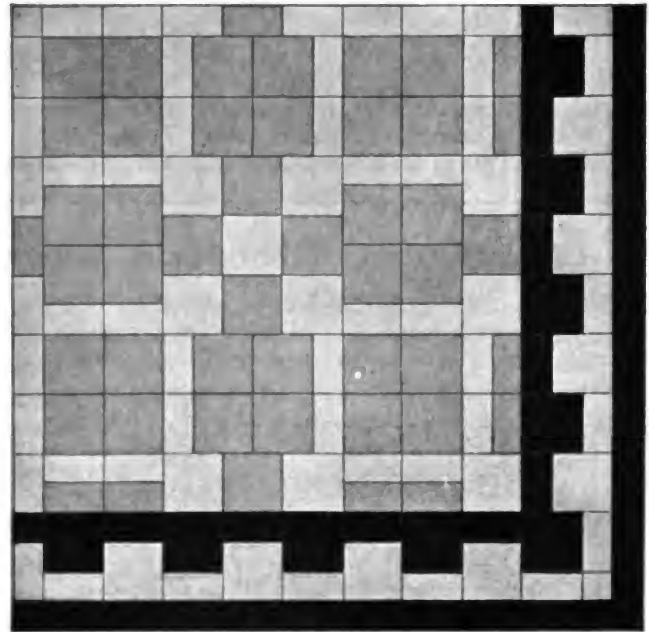
This cut illustrates our patent Grip Back, a circular dovetail mortise on back of our Wall Tiles. The air, escaping through the vents, permits the grips to be filled with mortar, locking the tiles firmly to the wall, which guarantees against tiles coming loose.

Continued on next page

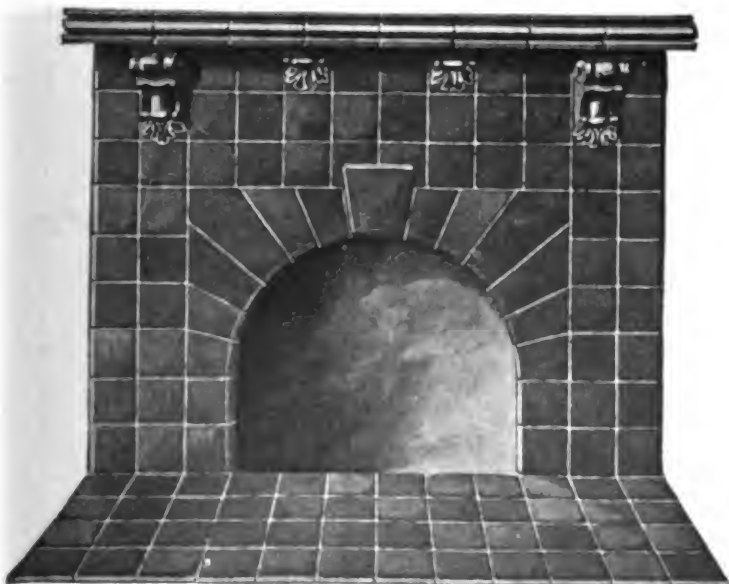
Sanitary Treatment in
AETCO Noncrazing White Wall Tiles



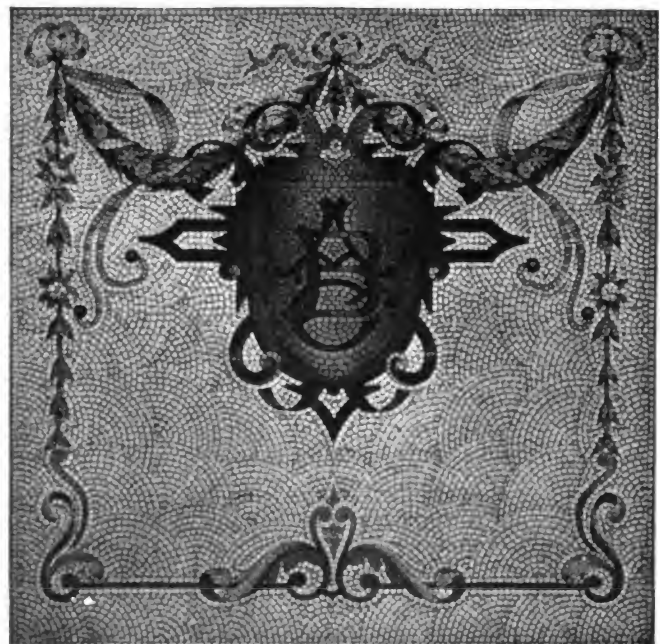
OHIO Floor Paving Tiles
In an Exclusive Line of Vitreous Colors



Architectural Faience
A Mantel in Matt Glazes



Gobelin Mosaic
Rich-Subdued Colors in Matt Glazes
Of Beautiful Texture



Submit Plans or Descriptions of Requirements for Which
Designs of Special or Stock Patterns
Will be Furnished

The Marbleloid Company

Manufacturers of Marbleloid-Sanitas Fireproof Flooring

BROADWAY AND THIRTY-FOURTH STREET

Factory:
NEW DURHAM, N. J.

NEW YORK, N. Y.

AGENCIES THROUGHOUT THE UNITED STATES

PRODUCT—MARBLELOID-SANITAS FIREPROOF FLOORING

A perfect floor or wainscot covering rapidly supplanting tile, terrazzo, mosaic, hard wood or linoleum, and widely specified by leading architects for use in:

Hospitals	Amusement Halls	Stores
Schools	Public Buildings	Cafés
Churches	Industrial Plants	Garages
Hotels	Restaurants	Kitchens
Theatres	Bath Rooms	Laundries
Banks	Railway Depots	Hallways, etc.

TECHNICAL DESCRIPTION—Marbleloid-Sanitas is a composition material for floors, cove base, wainscot, treads, risers, trim, etc. It is permanent, absolutely sanitary, fireproof and waterproof, and artistic in appearance. It is applied upon wood, concrete or iron foundation and hardens in from eight to ten hours. Installed in a plastic state the floor becomes one solid sheet presenting a continuous fine-grained smooth surface, with no cracks or crevices in which germs, dust, etc., may lodge.

The product has been tested and approved by the Bureau of Buildings, Manhattan, as fireproof material. Copies of the report of this test and of other physical tests made by Prof. Ira Woolson, of Columbia University, will be gladly furnished upon request.

The product is usually installed in two coats—a fibrous undercoat laid from three-sixteenths to one-quarter of an inch thick, and an upper coat containing much less fiber laid five-sixteenths of an inch thick. The fibrous undercoat gives the material great elasticity, enabling the floor or wainscot to withstand any cracking-tendency in the foundation; it also renders the floor noiseless and pleasant to the tread. The upper coat, with small percentage of fiber, affords an especially fine-grained smooth surface, and of such hardness as to enable it to resist wear under the severest conditions. Notwithstanding the hardness of this surface coat it



is not slippery; therefore Marbleloid-Sanitas is being constantly specified for stair treads.

No sand or Portland cement is used in the manufacture of this material. It is made in all colors and may be installed in two or more colors in ribbon or border effects. The product is unaffected by heat, moisture or any climatic conditions, it having been installed repeatedly in shower baths, porches, etc.

COST—A very appreciable economy is obtained in the use of Marbleloid-Sanitas; it will outwear any other kind of flooring and costs less than tile, mosaic or terrazzo. In the case of wood foundations the material can be applied directly upon the wood underflooring.

GUARANTEE—The Marbleloid Company guarantees the quality of its material and all work performed by its own workmen.

HOW TO SPECIFY—Printed specifications for proper foundations for our material as well as for applying the product itself will be gladly furnished upon request, also samples, color card or estimate.

REFERENCES—A few of our completed contracts:

HOSPITALS AND ASYLUMS
Presbyterian Hospital, Newark, N. J.
Children's Hospital, Washington, D. C.
Ellis Island Hospital, Ellis Island, N. Y.
Sloan Maternity Hospital, New York, N. Y.
French Hospital, New York, N. Y.
Overlook Hospital, Summit, N. J.
Lee Memorial Hospital, Fulton, N. Y.
Cooper Hospital, Camden, N. J.
University Hospital, Philadelphia, Pa.
Cortland Co. Hospital, Cortland, N. Y.
General Hospital, Paterson, N. J.
State Hospital, Fountain Springs, Pa.
Homeopathic Hospital, New York, N. Y.
Pottstown Hospital, Pottstown, Pa.
State Hospital, Binghamton, N. Y.
State Hospital, Shamokin, Pa.
City Hospital, Blackwells Island, N. Y.
Kings Co. Hospital, Brooklyn, N. Y.
City Hospital, Perth Amboy, N. J.
Essex Co. Asylum, Overbrook, N. J.
Hudson Co. Asylum, Snake Hill, N. J.
Home for the Aged, Paterson, N. J.
Hungarian Relief Soc., N. Y. City
Orphans Home, Womelsdorf, Pa.
Northern Home, Philadelphia, Pa.
Children's Aid Soc., Chappaqua, N. Y.
Ottillie Orphan Asylum, Jamaica, N. Y.
Howard Orphan Asylum, Kings Park, N. Y.
The Sheltering Arms, Philadelphia, Pa.

Municipal Lodging House, N. Y. City
Bethlehem Orphan Asylum, N. Y. City
N. Y. Infant Asylum, N. Y. City
SCHOOLS
Haverford College, Haverford, Pa.
Rutgers College, New Brunswick, N. J.
U. S. Naval Academy, Annapolis, Md.
Wells College, Aurora, N. Y.
The Bennett School, Millbrook, N. Y.
School No. 13, Troy, N. Y.
Kent Place School, Summit, N. J.
Franciscan Sisters, Peckskill, N. Y.
St. John's College, Brooklyn, N. Y.
George School, Newtown, Pa.
High School, Scottsdale, Pa.
Miss Chapin's School, N. Y. City
Manual Training High School, Brooklyn, N. Y.
Lansingburg High School, Troy, N. Y.
High School, Woodbridge, N. J.
High School, South Orange, N. J.
High School, Perth Amboy, N. J.
Pawling School, Pawling, N. Y.
P. S. No. 44, Rockaway, N. Y. City
P. S. No. 43, Rockaway, N. Y. City
P. S. No. 29, College Point, N. Y. City
INDUSTRIAL PLANTS
General Electric Co. (three plants)
Standard Oil Co., Bayonne, N. J.
Robt. H. Ingersoll & Bro., N. Y. City
L. E. Waterman Co., N. Y. City

General Chemical Co., Newell, Pa.
Press-Chronicle Bldg., Paterson, N. J.
Spencer Kellogg Co., Buffalo, N. Y.
N. Y. Edison Co., N. Y. City
Zurich Silk Finishing Co., N. Y. City
White Dental Mfg. Co., Staten Island, N. Y.
Standard Gas Co., N. Y. City
Scott & Bowne, Bloomfield, N. J.
Finley Acker Co., Philadelphia, Pa.
Star-Gazette, Elmira, N. Y.
Am. Platinum Co., Newark, N. J.
CHURCHES
Trinity Church, Buffalo, N. Y.
St. James M. E. Church, N. Y. City
First Church of Christ, Cranford, N. J.
St. Paul's Baptist Church, Philadelphia, Pa.
Penna. Ave. Baptist Church, Scranton, Pa.
St. Luke's Church, Buffalo, N. Y.
Lutheran Church, Pottstown, Pa.
First Church of Christ, Ridgetown, N. J.
Our Lady of Good Council, N. Y. City
Holy Trinity Parish, Brooklyn, N. Y.
HOTELS
Oriental Hotel, Manhattan Beach, N. Y.
North End Hotel, Ocean Grove, N. J.
Cortland Hotel, Cortland, N. Y.
Pine Grove Inn, White Plains, N. Y.
Hoffman Arms, N. Y. City

Hotel Beresford, N. Y. City
Oriental Hotel, Glen Cove, N. Y.
Hotel Lincoln, N. Y. City
Edgemere Hotel, East Orange, N. J.
Square Hotel, Yonkers, N. Y.
CLUB HOUSES
Union League Club, Philadelphia, Pa.
Downtown Association, N. Y. City
Acorn Club, Philadelphia, Pa.
Elk's Club House, Shamokin, Pa.
Masonic Temple, White Plains, N. Y.
Hill Top Y. M. C. A., Pittsburg, Pa.
Bedford Y. M. C. A., Brooklyn, N. Y.
Y. M. C. A. Building, Tarrytown, N. Y.
Labor Temple, N. Y. City
BANKS
Suffolk Co. Trust Co., Riverhead, L. I.
Dime Trust Co., Shamokin, Pa.
First Nat. Bank, Jersey City, N. J.
Mechanics Bank, Brooklyn, N. Y.
City Savings Bank, Oswego, N. Y.
City National Bank, Binghamton, N. Y.
Hempstead Bank, Hempstead, N. Y.
THEATRES
Star & Garter Theatre, Chicago, Ill.
Newell Theatre, White Plains, N. Y.
Monticello Theatre, Jersey City, N. J.
Palace Theatre, Yonkers, N. Y.
Queens Theatre Bldg., Queens, L. I.

ALSO IN R. R. STATIONS, LOFT AND OFFICE BUILDINGS, BOATS, STORES, DAIRIES, RESTAURANTS, RESIDENCES, GARAGES, ETC.

"A.B.C." SYSTEMS

Asbestolith Manufacturing Company

Manufacturers of

Sanitary "Asbestolith" Fireproof Flooring

1 MADISON AVENUE
NEW YORK, N. Y.

R. C. Burnside
President



PRODUCTS—"Asbestolith" FLOORING, SANITARY BASE WAINSCOTING, TRIM, STAIRS, ETC.

DESCRIPTION—"Asbestolith" is a remarkably light, warm, and durable material for floors, sanitary base wainscoting, trim, stairs, treads and other similar uses. It is **absolutely fireproof**; impervious to heat, cold and dampness; elastic, clean and noiseless—hence **thoroughly sanitary**. It will not chip, tear loose from its base, nor disintegrate under wear. When finished it presents a fine-grained smooth surface which **never becomes slippery**.

"Asbestolith" is easily laid while in a plastic condition on any surface, hardening quickly, and is ready for use in a few hours. It is, therefore, also an excellent covering for old wood or cement floors. It will wear as long as marble, tile, terrazzo, and all other forms of flooring in common use.

The successful use of "Asbestolith" on decks of U. S. warships endorses its durability beyond all question.

SANITARY QUALITIES—The method of laying and finishing the flooring seals the entire surface hermetically, making it impossible for germs or dirt of any kind to obtain an entrance. When laid in connection with our Sanitary Base it may be washed with cold or hot water or disinfectants without any moisture finding entrance at the wall angle. The smooth surface will not accumulate dust.

Hospitals everywhere highly endorse its sanitary qualities.

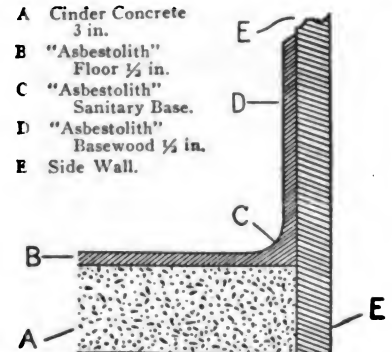
COLORS AND WEIGHT—Made in various colors, such as red, buff, slate, black, blue and green, and may be laid either with a solid color or with borders of another color, producing a pleasing effect. Being comparatively light in weight (less than half the weight of marble, tiling, etc.) it may be used on weak floor structures where the heavier material quoted above would be excluded.

REFERENCES—"Asbestolith" has been used with entire satisfaction in the following varied class of buildings:

Mt. Hermon dormitory, Mass.
Corpus Christi School, Texas
Roosevelt Hospital, N. Y. City
J. D. Crimmins residence, N. Y. City
Auchincloss residence, 71st St., N. Y. City
Auchincloss residence, 69th St., N. Y. City
R. H. Robertson & Sons, N. Y. City
Clement Brun, N. Y. City
Wm. Bradley stable, N. Y. City
T. A. Adams residence, Montclair, N. J.
Manhattan Refrigerating Co., N. Y. City
Singer Sewing Machine Co., N. Y. City
Ernest Flagg, N. Y. City
Hon. T. P. Gilman, N. Y. City
General Electric Company, N. Y. City
James Bradley, Ridgefield, Conn.
Passaic Day Nursery, Passaic, N. J.
Albany Orphan Asylum, Albany, N. Y.
Wood Harmon Co., Brooklyn, N. Y.
American Hawaiian S. S. Co., N. Y. City
N. Y. & Cuba Mail S. S. Co., N. Y. City
Hudson River Day Line, N. Y. City
Duke farm, Raritan, N. J.
N. Y. Staats Zeitung, N. Y. City
Herman Ridder, N. Y. City
Hahnemann Hospital, Rochester, N. Y.
James S. Jenkins, Conn.
Newport News Shipbuilding Co., Va.
Duffy Hospital, Yonkers, N. Y.
Endicott Hotel, N. Y. City
Yale University, Conn.
Revillon Freres, N. Y. City
Scoville Mfg. Co., Waterbury, Conn.
Quadrangle Club, Princeton, N. J.
Colony Club, N. Y. City
Rockefeller Institute, N. Y. City
Pine Street School, Poughkeepsie, N. Y.
High School, Ardmore, Pa.
General Hospital, Waterbury, Conn.
Y. M. C. A., Waterbury, Conn.
Alfred Hopkins, N. Y. City
Otis Elevator Co., N. Y. City
H. M. Baer, N. Y. City
National Biscuit Co., N. Y. City
H. P. Kirkham & Son, N. Y. City
H. Wales Lines Co., Meriden, Conn.
Ft. Bayard Hospital, New Mexico
Fortress Monroe Hospital, Va.
Lawrence residence, Washington, D. C.
Rush residence, Scarsdale, N. Y.
Rushmore residence, Woodbury, N. Y.
Stern residence, Roslyn, L. I.
N. Y. C. & H. R. R. Co., N. Y. City
Pennsylvania R. R. Co., N. Y. City
Lehigh Valley R. R. Co., N. Y. City
D. L. & W. R. R. Co., N. Y. City
Prince Albert Hospital, New South Wales
Harlan & Hollingsworth, Wilmington, Del.
Union Theological Seminary, N. Y. City
Edw. Roche residence, Far Rockaway, N. Y.
Weiner residence, Far Rockaway, N. Y.

ADAPTABILITY—"Asbestolith" is adapted for use in bathrooms, libraries, billiard rooms, kitchens, laundries, churches, schools, hospitals, theaters, factories, banks, stores, cafés, restaurants, hotels, office and public buildings, railway depots, garages, decks of vessels, porches and places where noiselessness, safety and resistance to wear are required.

The adjoining illustration indicates in detail how "Asbestolith" is laid. Note that the floor and cove base have no joint whatever but make together *one continuous surface*.



SECTION SHOWING "ASBESTOLITH" FLOORING LAID ON CINDER CONCRETE AND CEMENT. ALSO WOOD BACKING.

Time of min.	Temp. of Sample.	Bk. Difference.	Temp. of Fur. ° F.
0	75		797
1	75	0	806
3	82	7	929
5	96	21	1046
6			1116
10	140	65	1354
11			1386
15	166	91	1591
16			1646
20	180	105	1749
22			1769
25	182	107	1749
30	202	127	1759

FIRE TEST REPORT REMARKS: AT 1501° F. BEGAN TO WARP BETWEEN SUPPORTS, NO CRACKS

PRICES, ESTIMATES AND FACILITIES—"Asbestolith" is inexpensive, costs little to lay and nothing to maintain.

Prices, samples and specifications furnished upon application.

We execute work of any extent, large or small, in any part of the country.

sfaction in the following varied class of buildings:

E. D. Morgan residence, Westbury, N. Y.
Gilbert School, Winsted, Conn.
Hackley School, Tarrytown, N. Y.
Barnard College, N. Y. City
Adrian Iselin residence, New Rochelle, N. Y.
Tilley boathouse, Darien, Conn.
J. Bradish Carroll residence, Dongan Hills, S. I.
Smith Hospital, Staten Island
T. F. Smith residence, N. Y. City
Dr. Chetwood residence, N. Y. City
Hospital for Joint Diseases, N. Y. City
Miss Sands residence, N. Y. City
Wm. Rockefeller residence, N. Y. City
Frammore Building, N. Y. City
Consolidated Gas Co., N. Y. City
Reisenweber's Hotel, N. Y. City
D. J. Maloney, White Plains, N. Y.
Passaic Metal Ware Co., Passaic, N. J.
Interborough R. T. Co., N. Y. City
Sheltering Arms, N. Y. City
Edison Power House, N. Y. City
Eye, Ear and Throat Hospital, N. Y. City
Columbia University Medical School, N. Y. City
University College of Medicine, Richmond, Va.
Bradley Court, N. Y. City
Astor Estate, N. Y. City
Stamford National Bank, Stamford, Conn.
Marlborough-Blenheim Hotel, Atlantic City
Middlekorff residence, Plainfield, N. J.
Tetsuka residence, Plainfield, N. J.
Netherwood Fire House, Plainfield, N. J.
Isolation Hospital, Passaic, N. J.
Schwartzbach residence, South Orange, N. J.
Jersey City Hospital, Jersey City, N. J.
Oswego Hospital, Oswego, N. Y.
U. S. Navy Yard, Brooklyn, N. Y.
Knickerbocker Trust Co., N. Y. City
Maxine Elliot Theatre, N. Y. City
J. C. Green residence, Greenwich, Conn.
House of Detention, Newark, N. J.
St. Patrick's Cathedral, Newark, N. J.
Carnegie Institute, Cold Spring Harbor, N. Y.
Siegel-Cooper Co., N. Y. City
Union County Court House, Elizabeth, N. J.
St. George Hotel, Brooklyn, N. Y.
American Theatre, St. Louis, Mo.
Du Flon residence, Plainfield, N. J.
T. R. Smith residence, Plainfield, N. J.
St. Louis Hospital, St. Louis, Mo.
Insane Hospital, St. Louis, Mo.
American Shipbuilding Co.
Panama S. S. Co.
Booths S. S. Co.
New York Fire Department, 60 buildings

Asbestolith has been laid and used for the last fourteen years

The Atlas Floor Company

Manufacturers of Sanitary Composition Flooring

OLD COLONY BUILDING
 CHICAGO, ILL.

PRODUCT—THE ATLAS SANITARY COMPOSITION FLOORING

THE ATLAS FLOOR—An *absolutely* sanitary floor and wainscot composition that costs less and lasts longer than tile, terrazzo or marble. It contains no sand, sawdust, glue, cement or pulp and consequently will not disintegrate. It is fireproof, waterproof and germproof, and its wearing qualities have been tested by ten years' use in:

Public Buildings	Schools	Garages
Churches	Banks	Kitchens
Restaurants	Hotels	Laundries
Railway Depots	Theaters	Bakeries
Amusement Halls	Hospitals	Libraries
Industrial Plants	Stores	Factories



GUARANTEE—Atlas Sanitary Composition Flooring is guaranteed to possess the above qualities as stated.

GOVERNMENT TEST—The United States Government, when contemplating the use of sanitary composition flooring at their Fort Sheridan Hospital, had the general contractors, R. R. Cowie & Company, Waukegan, Illinois, submit samples to the Government Engineer, Mr. Drummond, for testing, and out of the six samples submitted the **Atlas Sanitary Composition Flooring** was selected as the best.

This is a good reason why architects should not experiment with doubtful kinds of composition flooring, but specify and use **Atlas**—one that has been tried out by years of actual use and under all conditions.

DESCRIPTION—Atlas Sanitary Composition Flooring is a non-porous, fireproof, elastic material. It presents a continuous surface that is dustless, easy to the tread, and does not become slippery when wet like other floors.

FEATURES—No special foundation is necessary. Atlas Sanitary Composition Flooring is laid in one continuous layer over old wood, iron, stone or cement floors.

The cove base and floor are brought to a true, smooth surface by troweling. No seams nor joints to accumulate dust and dirt as with most other flooring materials.

There is enough elasticity in Atlas Sanitary Composition to prevent it cracking from the settling of the building. It forms an impervious covering, proof against vermin or absorbing odors and stains.

Atlas Sanitary Composition Flooring contains no inflammable material, and may be relied upon as a thoroughly fireproof flooring and wainscot.

It is resilient and non-slippery, making a floor that is easy to stand or walk on.

An Atlas Floor may be used one day after laying, becoming harder, stronger and better with age. It lasts indefinitely—outwearing any other kind of floor.

COLORS—This material may be had in all the standard colors to harmonize with the surroundings, and is usually employed where an artistic sanitary fireproof floor is desired. The coloring is mixed with the loose material before being laid, thus insuring uniformity and permanence.

COST—Atlas Sanitary Composition Flooring costs considerably less than tile or marble.

REFERENCES—

ARCHITECTS

Marshall & Fox, Chicago
 R. E. Schmidt, Garden & Martin, Chicago
 Holabird & Roche, Chicago
 J. L. Koster, Chicago
 A. S. Alschuler, Chicago
 Geo. C. Nimmons, Chicago
 Worthman & Steinbach, Chicago
 Clifford Shopbell & Co., Evansville, Ind.
 Dean & Dean, Chicago
 F. D. Creighton, Gary, Ind.
 W. S. Epperson, Canton, Ohio
 E. Hill Turnock, Elkhart, Ind.
 J. A. McIntyre, Denver, Colo.
 Opal, Torbitt & Miller, Springfield, Mo.

CONTRACTORS

Winslow Brothers Iron Works, Chicago
 Scarborough Davies Co., Evansville, Ind.
 C. W. Esentrot, Wilmette, Ill.
 R. R. Cowie & Co., Waukegan, Ill.
 C. W. Hayward Co., Evansville, Ind.
 E. L. Scheidenhelm, Chicago
 John H. Griffiths & Son, Chicago
 Geo. B. Swift & Co., Chicago
 Wells Bros., Chicago
 Keller E. Huff, Canton, Ohio
 Chaney & Archibald, Chicago
 Frank W. Hunt, Springfield, Mo.
 Guaranty Construction Co., Chicago
 Indiana Improvement Co., Gary, Ind.
 English Brothers, Champaign, Ill.

STORES

Carson, Pirie, Scott & Co., Chicago
 Rothschild & Co., Chicago
 Tom Murray, Chicago
 Bernard Coens, Chicago
 Frank Stoecker, Pullman, Ill.

RESTAURANTS AND CAFES

Brown & McKinnon, Chicago
 The Corona, Chicago
 G. A. Wenzel, Chicago
 Lotus Lunch Club, Chicago
 Pete Kelly, Chicago
 W. S. McNamara, Chicago
 Peter Foy, Chicago

Max Ascher, Chicago
 Frank Hinkamp, Chicago

BREWERIES

Schoenhofen Brewine Co., Chicago
 Atlas Brewing Co., Chicago
 Brand Brewing Co., Chicago

HOSPITALS

Michael Reese, Chicago
 Ft. Sheridan Hospital, Fort Sheridan, Ill.
 People's Hospital, Chicago

BAKERIES

Henry Kohlman, Chicago
 John Brockman, Chicago

RESIDENCES

C. F. Dobbins, Chicago
 C. A. Munroe, Chicago

PROPERTY OWNERS AND AGENTS

W. D. Kerfoot & Co., Chicago
 White & Tabor, Chicago
 Central Manufacturing District, Chicago

MISCELLANEOUS

Karpen Building, Chicago
 Gary High School, Gary, Ind.
 Elkhart High School, Elkhart, Ind.
 Evansville High School, Evansville, Ind.
 Carnegie Libraries, Evansville, Ind.
 Cathedral of Immaculate Conception, Denver, Colo.
 Hamilton Club, Chicago
 Northwestern University Dental School, Chicago
 Salvation Army Quarters, Chicago
 Fairmount Children's Home, Mt. Union, Ohio
 Chicago Railways Co. (Street Cars), Chicago
 American Sheet & Tin Plate Co. Office, Gary, Ind.
 American Sheet & Tin Plate Co. Workmen's Homes, Gary, Ind.
 J. P. Marzano (Undertaker), Chicago
 Otto Henche (Barber Shop), Chicago

AGENCIES—We have agencies in all the largest cities throughout the United States. Inquiries sent to us will be promptly referred to the agent nearest your locality.

Ideal Mat & Mfg. Co.

Manufacturers of Composition Floor Mats

809 ASHLAND BLOCK
CHICAGO, ILL.

PRODUCTS—COMPOSITION MATS for Office Building Corridors, Vestibules, Elevator Car Floors, etc.

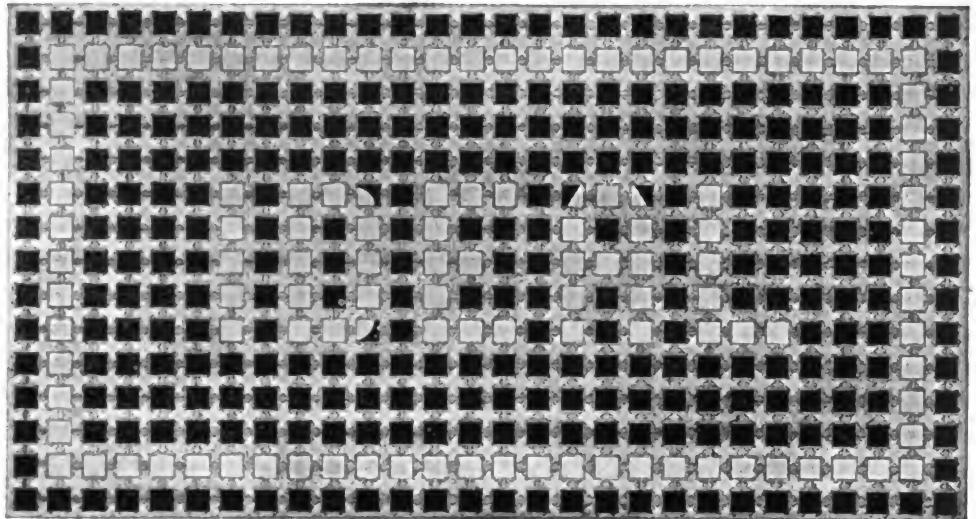
DESCRIPTION—The "Ideal Mat" is made of a composition material, set in a framework of heavy galvanized band steel. The composition, which has the appearance of rubber, consists of a body of **Selected Felt** impregnated with a preservative which gives it **wearing qualities** and renders it **moistureproof**. It is also resilient and affords a soft and easy tread.

This composition material is formed into blocks one inch square and three-eighths inch in thickness. Each block is firmly bound on the four sides by the galvanized steel framework, and is held in position by means of two galvanized rivets placed through the center of the material.

The necessary number of blocks to form a mat are mechanically joined together in such a manner that they are **individually flexible**; thus the mat **cannot warp, curl up, or crack**, but will always lie flat on any surface.

The resiliency of the composition squares provides against their wearing *below* the surface of the metal structure, and therefore insures a permanent slipproof surface.

ADVANTAGES—LETTER DESIGNS—By reason of the size and shape of the blocks employed, and the symmetrical construction of the complete "Ideal Mat," it is possible to incorporate



letters, numerals and border designs in the mat by using materials of **various colors**. This combines advertising value with utility, and is an advantage that is found only in the "Ideal" composition mat.

DURABILITY—The "Ideal" will outwear several times any ordinary mat and **costs less** than the best grade of rubber mat.

FLEXIBILITY—The "Ideal Mat" can be **rolled up like a rug**, crosswise or lengthwise, making it compact and convenient for handling when cleaning the surface underneath.

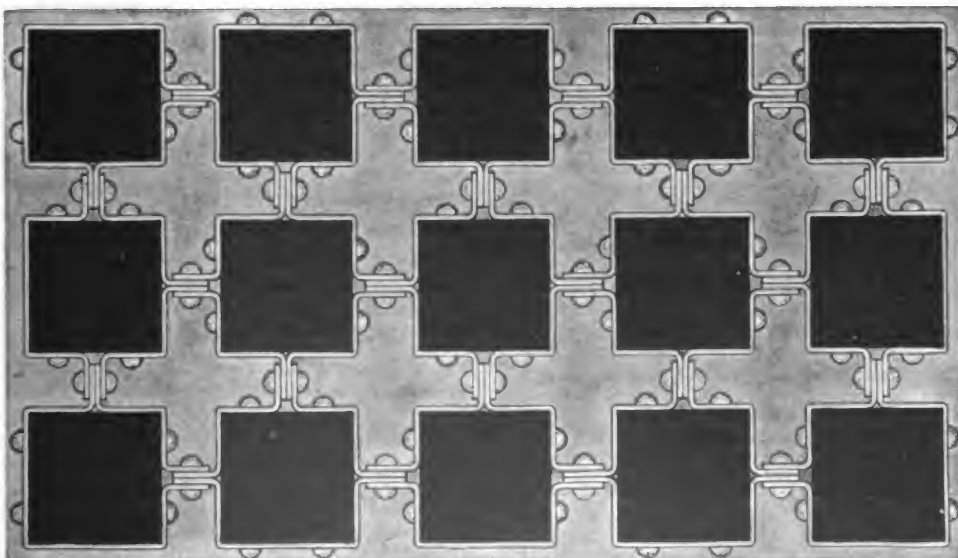
NON-SLIPPING—In modern buildings where floors are constructed of marble, mosaic tile, and similar hard *smooth* materials, a mat that is **non-slipping** is a great desideratum. The mastic nature of our composition material provides an **absolutely firm foothold** and eliminates the possibility of accidents from slipping of the mat.

PERFORATIONS—The fact of our mat having a **perforated structure**, together with its adhesiveness to the floor surface, prevents the **tracking of germ-laden dust** and moisture into the interiors of the buildings.

SUMMARY—The "Ideal Mat" thus combines safety and sanitation with economy, durability, flexibility and good appearance.

Roll it up and sweep—no beating-out of filthy dust.

PRICES, SAMPLES, ETC.—Will be furnished on application together with other detail information desired concerning our product.



CLASSIFICATION PAGE OF
SECTION 26

**Composition Roofing, Sheathing, Flooring,
Paving and Insulating Products**

(Pipe and Boiler Covering see Section 28)

Section Synopsis

A. Building and Insulating Paper, Tarred Roofing Felt, Natural Hair Felt, Quilt; Asphalt, Coal Tar Pitch; Cork; Asbestos Paper, Felt, Cement, etc.

B. Asphalt and Gravel, Pitch, Slag, Plastic Slate, Asbestos, Actinolite and other Patent Composition Roofing; Ready Roofing of all varieties; Roofers' Cement; Protective Roof Coatings; Rock Asphalt Roofing; Flat-Tile Roofing; Asbestos Shingles; Roofing Burlap

C. Pavements and Flooring of Standard and Patent Cement Composition, Cement Tile, Asphalt Blocks, Rock Asphalt, Wood Blocks, Cork Paving Brick, etc., for sidewalks, streets, stables, breweries, warehouses, courtyards, etc.

D. INSULATING AND DEAFENING MATERIALS, against heat, cold, sound, and dampness; Papers, Cements and Mastics, Felts and Quilts, of asbestos, hair, fiber, etc.; Mineral Wool; Cork Insulation, board, blocks, granular

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX		
REGULAR CLASSIFICATION		
A	1	Materials:—
	2	Actinolite
	3	Asbestos paper, felt, cement, etc.
	4	Asphalt cement and coal-tar pitch
	5	Building paper, all kinds
	6	Cork, granulated, sheet
	7	Insulating papers, special
	8	Natural hair felt, quilt, etc.
	9	Rock asphalt
B	20	Tarred roofing felt
	21	Actinolite tile
	22	Asbestos shingles
	23	Flat-tile concrete and asphalt roofing
	24	Plastic composition roofing:—
	25	Actinolite
	26	Asbestos
	27	Asphalt and gravel
	28	Asphalt and slag
	29	Cork composition
	30	Plastic slate
	31	Protective roof coatings
	32	Ready roofing:—
	33	Asbestos felt
	34	Asphalt and felt
	35	Burlap roofing
	36	Flint-coated
37	Gravel-coated	
38	Magnesia cement	
39	Mica-surfaced	
40	Patent composition and felt	
41	Prepared roof and deck canvas	
42	Rubber composition	
43	Sand-coated	
44	Slate-surfaced	
45	Rock asphalt roofing	
46	Roof fasteners, patent, wire	
47	Roofers' cement, daub	
48	Roofing burlap	
49	Standard felt, cement (asphaltic cement and coal-tar pitch) and gravel, or slag, roofing	

C	60	Pavements and flooring:—
	61	Asphalt block
	62	Cement-tile
	63	Cork paving brick
	64	Rock-asphalt
	65	Special cement asphalt composition
	66	Special patent composition and felt
D	67	Standard cement composition
	75	Wood-block
	76	Insulating and deafening materials:—
	77	Asbestos paper, felt, cement, mastic
	78	Asphalt paper, felt, cement
	79	Cork, granulated, board, blocks
	80	Hair felt and quilt
SPECIAL CLASSIFICATION	101	Mineral wool
	102	Wood-fiber material
	Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
	103	Awning cloth, stripes (S. 43 A)
	104	Dampproofing coatings (S. 5)
	105	General house and roof paints (S. 39 B)
	106	Pipe and boiler coverings, heat insulation (S. 28 D)
	107	Pipe and tank covering, cold insulation (S. 28 D)
	108	Shingle stains (S. 39 C)
	109	Stone backing, plaster bond, waterproofing mastic (S. 4)
TRADE NAMES AND BRANDS	101	Technical paints (S. 5)
	102	Waterproofing cement (S. 4)
	103	"Asphaltus," roof coating
	104	"Crystalite," asphalt ready roofing
	105	"Diamond Grit," asphalt ready roofing
	106	"Liberty," asphalt ready roofing
	107	"Permanent," roof paint
	108	"Royal," asphalt ready roofing
	109	"Security," asphalt ready roofing
	110	"Sparkloid," asphalt ready roofing
TRADE NAMES AND BRANDS	111	"Standard," asphalt ready roofing
	112	"Bayonne," roof and deck cloth
	113	"Gulf Stream," roofing canvas
	114	"Carborine," roof coating
	115	"Lincoln," flint-coated ready roofing
	116	"Lythoid," ready roofing
	117	"Tryon," ready roofing
	118	"Ekret's," slag roofing
	119	"Eternity," tile roofing
	120	"Elaborated," ready roofing and floor covering, Catalog B 7
TRADE NAMES AND BRANDS	121	"Howard's," double-lap ready roofing and patent roof fastener, Catalog B 1
	122	"Ibex," insulating paper
	123	"Paradox," canvas roofing
	124	"Rex Flintkote," ready roofing
	125	"Rutherford," insulating paper
	126	"J-M," line of asbestos roofing and siding, transite asbestos shingles, saturated felts, waterproofing coatings and cements, etc., Catalog B 8
	127	"Neverleak," waterproof duck canvas, S. 43 A, Catalog 2
	128	"Nonpareil," corkboard insulation, S. 28 D, Catalog 1

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFER- ENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere ac- cording to their general line of business.					Manufacturers without Catalog data	Sub-Index Number			
		1 to 25	26 to 50	51 to 75	76 to 100	101 to 125							1 to 25	26 to 50	51 to 75	76 to 100
B 6	Boyle & Co., John New York, N. Y.		32 38				Armstrong Cork Co. S. 28 D, Cat. 1 (Corkboard insulation)					Aeolian Plastic Roofing Co.... New York, N. Y.		26 46		
B 7	Elaborated Roof- ing Co. Chicago, Ill.	3	37	65								All Roofing Mfg. Co..... East St. Louis, Ill.	3 4 9 25	26 31 39 46		
B 5	Flintkote Manu- facturing Co. Boston, Mass.	6	38		76	102 110						American Flexible Slate & Covering Co. Milwaukee, Wis.		28 37		
B 8	Johns - Manville Co., H. W. New York, N. Y.	2 5 6 7 21 24	29 30	75	77 78 79 80	102 104 105 107 109		Eberhardt & Co. S. 43 A, Cat. 2 (Roof and deck canvas)				Asbestos Shingle, Slate & Sheating Co. Ambler, Pa.	21			
B 4	Lincoln Water- proof Cloth Co. Bound Brook, N J.		29 34 40									Asphalt Roofing Co..... Saginaw, Mich.	3 4 8 25	31 39 42 46		
B 3	National Roofing Co., The Tonawanda, N. Y.	3 9	29 31 33 34 36 39		76	102 103 108 109						Asphalt Ready Roofing Co.... New York, N. Y.		31 34 46		
B 1	Usona Manufac- turing Co., The Aurora, Ill.	3 9	29 31 32 33 36 40 41 43		76			Yellow Pine Mfrs' Assn. S. 21 A, Cat. 1 (Wood paving blocks)				Barrett Mfg. Co..... New York, N. Y.	3 9	29 37 39 44		
B 2	Warren-Ehret Co. Philadelphia, Pa.	3 9 22	26 46									Bear River Paper & Bag Co.. Petoskey, Mich.	4			
												Birmingham & Seaman Co.. Chicago, Ill.	4 6	29 32 39 44	75	
												Barber Asphalt Paving Co.. Philadelphia, Pa.	8	31 42	60	
												Bicking, S. Austin..... E. Downingtown, Pa.	4			
												Bird & Son, F. W..... East Walpole, Mass.	4 6	29		76
												Bird & Co., J. A. & W..... Boston, Mass.	4 6 7	29		76
See also the Catalogs in Section 13: BUILD- ING MATERIALS AND GENERAL SUPPLIES																

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 25	26 to 50	51 to 75	76 to 100	101 to 125		1 to 25	26 to 50	51 to 75	76 to 100	101 to 125		1 to 25	26 to 50	51 to 75	76 to 100	101 to 125
Bortel Co., E. G. Philadelphia, Pa.		46				De La Vergne Machine Co. Cincinnati, Ohio			75	78		General Weatherproofing Co. St. Louis, Mo.	2	37 46			
Rox Board & Lining Co. New York, N. Y.	3 4 9	29 31 33 39 44 46				Diem & Wing Paper Co. Cincinnati, Ohio	25	29 46				Heppes Co. Chicago, Ill.	3	31 34 39 42 44			
Cabot, Samuel. Boston, Mass.				78		Duquesne Slag Products Co. Pittsburgh, Pa.		46				Hetzel Estate, J. G. Newark, N. J.		44			
Carbonoid Mfg. Co. New York, N. Y.	4 6					Eastern Granite Roofing Co. New York, N. Y.	3 4 9	34 39				Hewitt & Bros., C. B. New York, N. Y.	2 4 6		75		
Carey Mfg. Co., Philip. Cincinnati, Ohio	2 3 6	29 31 32 45	75	76 78		Federal Cement Tile Co. Chicago, Ill.	22					Hopkins Co., H. H. Chicago, Ill.	2 4	39			
Carlyle Paper Co. Carlyle, Ill.	4 9					Fisher Bros. Paper Co. Port Wayne, Ind.	4 9	39	75	77 78 79		Inlaid Slate Co. Pen Argyl, Pa.	22				
Carpenter-Morton Co. Boston, Mass.		31				Ford Mfg. Co. Chicago, Ill.	3 4 8 9 25	29 31 34 39 42 44 46	60 63 64 66 75			Keasby & Mattison Co. Ambler, Pa.	2 21 24	30 35	75	78 104 105	
Chatfield Mfg. Co. Cincinnati, Ohio	3 4 9 25	28 31 42 44 46	64 75	77 78 79 80		Fox Paper Co. Lockland, Ohio	4					Kingston's Son, Wm. Little Falls, N. Y.	4		75	78	
Chicago Fire-Proof Covering Co., Chicago, Ill.		37 46				Garrett & Son, G. S. Philadelphia, Pa.	4 6		75	79		La Fean Paper Co. York, Pa.	4				
Commonwealth Roofing Co. New York, N. Y.	3 9 25	26				General Kompolite Co. New York, N. Y.			61 66			Lang Paper Co., John. Philadelphia, Pa.	4				
Compostone Co. New York, N. Y.			65			General Roofing Mfg. Co. East St. Louis, Ill.	3 4 8 9 25	29 31 34 39 42 44 46	64 66			Lehon Co. Chicago, Ill.	4	29 32	75		
Commonwealth Roofing Co. New York, N. Y.	3	46										Lockport Paper Co. Lockport, N. Y.	4		75		
Cosmento Roofing Co. New York, N. Y.		37										McPherson & Irvine Co. Baltimore, Md.	3 25	29 39 46			

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 25	26 to 50	51 to 75	76 to 100	101 to 125		1 to 25	26 to 50	51 to 75	76 to 100	101 to 125		1 to 25	26 to 50	51 to 75	76 to 100	101 to 125
New Construction Co., T... New York, N. Y.		37 46	60 61 64 65 66			Rosenberg Paper Co..... Chicago, Ill.	4 6					Union Fibre Co..... Wigona, Minn.	5			77 79	
New York Asbestos Mfg. Co.. New York, N. Y.	2 4 21 24	30 35	75		104 105	Schmidt & Ault Paper Co.... York, Pa.	4 9	34 46	75			United Cork Co..... Lyndhurst, N. J.	5			77	
Norristown Magnesia & As- bestos Co. Norristown, Pa.	2		75	79	104	Sergeant & Co., W. L., Inc... New York, N. Y.	4 9					United Roofing & Mfg. Co... Philadelphia, Pa.		37			
Oil City Asbestos Co..... Reno, Pa.	2				104 105	Single Paper Co., John..... Syracuse, N. Y.	2 4 9 24					United States Mineral Wool Co. New York, N. Y.				79	
Paige & Co., Frank B..... Boston, Mass.		46				Standard Asphalt & Rubber Co. Chicago, Ill.	3 8 25	31 42 44 45	60 63			Warren Chemical & Mfg. Co.. New York, N. Y.	2 3 4 5 8 9 25	28 29 30 31 34 37 39 42 46	63 64 75	77	
Paraffine Paint Co..... San Francisco, Cal.	3 4 9 25	29 30 31 34 45 46			104 105	Standard Paint Co..... New York, N. Y.	6	37				Webster Cement Co., W. F.... Cambridge, Mass.		29			
Parker Paper Co., J. C..... Louisville, Ky.	4	37 39	75			Stowell Mfg. Co..... Jersey City, N. J.	2 3 4 25	29 30 31 34 37 39 42 44	75			Western Elaterite Roofing Co. Denver, Colo.	3 4 24	29 31 37 39 45			
Patent Vulcanite Roofing Co. Chicago, Ill.	7	31 34 37 39 42 44				Sword Bros. Mfg. Co..... Mt. Holly, N. J.	4	31 39 42				Wilson & Baillie Mfg. Co..... Brooklyn, N. Y.		66			
Pioneer Paper Co..... Los Angeles, Cal.	3 4 9 25	31 34 39 42 44 45 46	64 75			Trainer Mfg. Co., C. W..... Boston, Mass.	2 5 7	21 24 30 35	75	77 78 79	104 105	Winthrop Asphalt Shingle Co. Chicago, Ill.		31			
Revis, W. H..... New York, N. Y.	22					Trinidad Asphalt Mfg. Co.... St. Louis, Mo.	1 2 3 4 8 9 22 23 24 25	28 30 31 34 39 42 44 45 46	60 63 64 67 75	79		Wissahickon Mfg. Co..... Mount Holly, N. J.	4	31 39 42			
Roberts Son & Co., John..... Waltham, Mass.	2		75									Wyckoff Pipe & Creosoting Co., Inc. New York, N. Y.		67			

The Usona Manufacturing Company

Manufacturers of Howard's Standing Double-Lap Roofing (Patented) and Usona Roofings, Paints, Roofing Cements, etc. AURORA, ILLINOIS

PRODUCTS—HOWARD'S STANDING DOUBLE-LAP ROOFING; SMOOTH-SURFACED, SAND-SURFACED, GRAVEL-SURFACED, WITH 2-, 2½-, 3-, 4- or 6-INCH LAP, SLATE-SURFACED, MICA-SURFACED AND BURLAP ROOFINGS; USONA SPECIFICATIONS; USONA ASPHALT ROOF PAINTS AND ROOF CEMENT, AND SPECIALLY-CONSTRUCTED PREPARED ROOFINGS made as desired

HOWARD'S STANDING DOUBLE-LAP ROOFING (Patented)—A new kind of Ready Roofing. All the objectionable points attaching to the regulation way of laying have been eliminated. The unsightly and frequently defective cement joint is replaced by one of much better appearance and which is also thoroughly watertight.

The idea of this joint is to incorporate into the seam a beveled wood cleat under which one lap is completed in the regular way and over which another lap is formed and metal-locked. The lower lap secures the Roofing and the upper one makes the weathertight seam, each free and independent of the other. No nails or fastener points from the upper lap pass through the lower, and all nails in the lower lap are covered and protected by the upper one. The wood cleats make the weathertight seam independent of roof-board conditions allowing Roofing to be laid over uneven roof boards, cracks, shingles, etc.

The sheets are laid up and down the roof. This is not only the easiest way to lay roofing but the sheet thus stretches out better, lessening the liability of buckles. Any buckling which does occur, being generally along the length of the sheet, does not cause lodgment of water on the roof. No gauge is required in laying as the lap is formed to the full depth of the split edge, which is of even width.



THIRD OPERATION IN LAYING AND FORMING LAP



COMPLETE, LAID OVER SMOOTH SHEATHING



COMPLETE, LAID OVER SHINGLES.



FIRST OPERATION IN LAYING AND FORMING LAP



SECOND OPERATION IN FORMING LAP



VALLEY WORK

"A.B.C." SYSTEMS

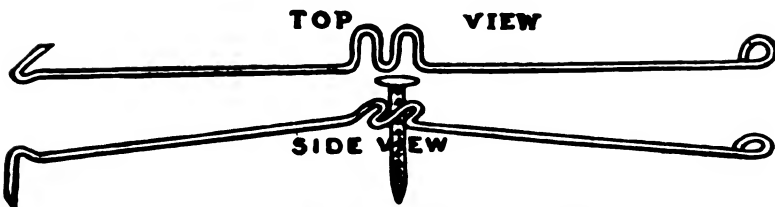
Continued on next page



A COMPLETED BUTT JOINT



DETAIL OF PROPER METHOD OF SKIVING OR BEVELING
 BATTEN AT END OF LAP



HOWARD'S ROOF FASTENER (PATENTED)
 Reduced Size—Actual Length 12"



A FEW OF THE THINGS THAT HAPPEN TO A LAP ON
 THE "OLD WAY" ROOFINGS

1. Head of Nail Cutting Fabric.
2. Buckling Between Nails.
3. Nail in Crack Allowing Buckle.
4. Edge of Board Split by Nail Allowing the Nail to Work Out in Time.
5. Edge of Sheet Pulling Nail from Crack or Soft Place in Board.



THE "NEW WAY" ROOF

"A.B.C." SYSTEMS

QUALITY OF MATERIAL—Howard's Standing Double-Lap Smooth-Surfaced Roofing is a thick, durable, tough fabric, suitable for use on the best work, and capable of resisting the action of all weathers, smoke or acid fumes, etc. In weight it exceeds the regular three-ply "rubber" Roofing. It is made in one grade only.

In addition to the Smooth-Surfaced Grade, we also have **Slate-Surfaced**, in red and slate-green, giving the added fire-resisting qualities of a mineral-surfaced Roofing, as well as the neater appearance of these color effects.

HOWARD'S ROOF FASTENER (Patented)—This device completely solves the problem of laying Ready Roofing. It does away with the use of the streaky cement joint and, at the same time, replaces the unreliable work produced by nailing with a Fastener that is not only permanent but also watertight. It pinches the lap continuously tight over its full length. This Fastener eliminates the possibility of buckles in the lap, as is the case between nails when nails, or cap and nails, are used.

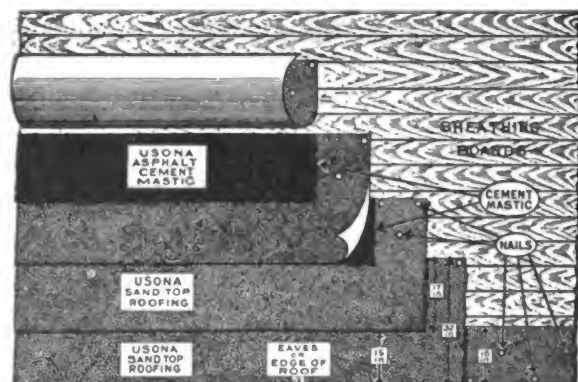
The Cuts show how this Fastener is used in applying Howard's Standing Double-Lap Roofing.

USONA SPECIFICATIONS—A new high-grade Asphalt Composition, or "built-up" roofing material. To take the place of tar and gravel. It weighs only about 200 pounds instead of about 600 pounds to the square; hence, permits of lighter roof construction. Being of asphalt, it is not as susceptible to weather conditions as tar. The gravel coating is only sufficient for the purposes for which it is applied, and no great surplus weight is added for the roof structure to carry. This coating of gravel, being embedded in the asphalt coating on the sheets of Roofing, permits the application of Usona Specifications on steep roofs as well as on flat ones. See illustration for detail of this construction.

CONTRACTING—We maintain a Contracting Department for applying our Roofings for our agents and dealers.

GUARANTEES—Proper guarantees for the various grades and kinds are furnished on our Prepared Roofings, provided our directions for applying are followed.

Weight, applied, about 200 lbs. to the Square



DETAIL OF "USONA" SPECIFICATIONS CONSTRUCTION
 No Exposed Nails

Warren-Ehret Company

Established 1852

Manufacturers and Contractors

Ehret's Slag Roofing and Eternity Tile Roofing

Branches

TRENTON, N. J.
PITTSBURGH, PA.

Home Office

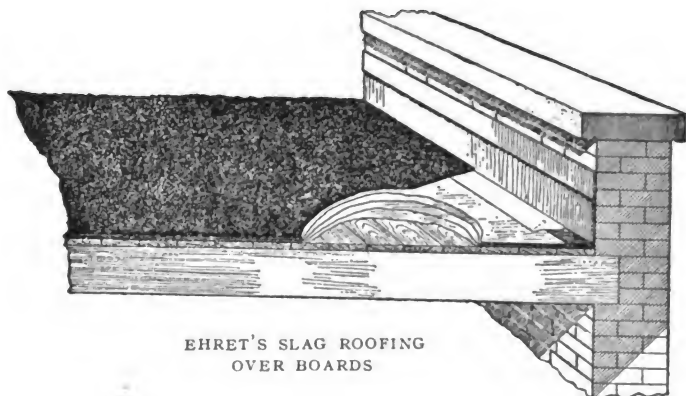
PHILADELPHIA, PA.

Branches

BALTIMORE, MD.
SCRANTON, PA.

PRODUCTS—EHRET'S SLAG ROOFING AND EHRET'S ETERNITY TILE ROOFING

EHRET'S SLAG ROOFING—Is composed of four layers of Acme Felt, solidly and uniformly cemented together with Diamond Roofing Cement and the whole surface thoroughly covered and protected with a coat of granulated slag. The felt and cement are manufactured exclusively by this company for use only in Ehret's Roofs. The slag is crushed and prepared by the company at its various crushers.



EHRET'S SLAG ROOFING
OVER BOARDS

Ehret's Roofs should not be classed with the various "Ready-to-lay" or "Machine-made" Roofings on the market. They are, on the contrary, put on under the direct supervision of the company's own superintendents and by its own men. They are built up on the roofs. This enables us to give an absolute guarantee for both the material and workmanship. The roofs are guaranteed for 10 years against natural wear and tear, and do not require any coating, painting or treating to prolong their life.

Buildings covered with Ehret's Slag Roof take the lowest rate of fire insurance on account of the fireproof qualities of the roof. It is the accepted standard roof for large industrial and manufacturing plants, office buildings, department stores, hotels and apartment houses; in fact, all classes of buildings.

The roof can be applied on Concrete Roof Decks equally as satisfactory as over wood sheathing.

SPECIFICATION FOR EHRET'S SLAG ROOFING—Over the roof deck, starting from the valley or eave of the roof, lay full four thicknesses or layers of Acme Brand Roofing Felt. Thus, make the first course full five thicknesses or layers; then follow with four layers of the above felt laid shingle fashion, lapping each width so that at all points of the roof there will not be less than four plies of felt. Thoroughly mop the surface between the layers of felt the full width of the lap with a coating of Diamond Brand Roofing Cement, in no case applied hot enough to injure the woolly fibre of the felt.

The weight of Acme Felt used in Ehret's Slag Roofing to be not less than 14 pounds per 100 square feet, single thickness.

Over the entire surface of the Felt thus applied spread a heavy coating of Diamond Brand Roofing Cement, amounting in all (in-

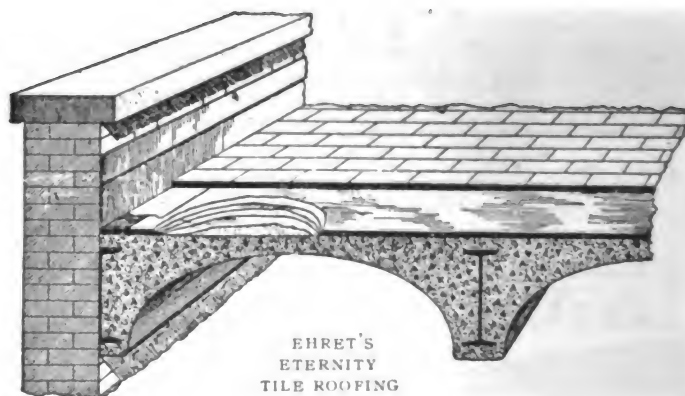
"A.B.C." SYSTEMS

cluding what is used between the layers of felt) to not less than 10 gallons of Cement per 100 square feet (heated as before specified), into which is to be broomed a coating of hard, clean Slag, crushed for the purpose, using no Slag larger than that which will pass through a $\frac{3}{4}$ " mesh, and none smaller than that which will be retained by a $\frac{1}{4}$ " mesh. The Slag to be free from sand, dust and dirt, and applied perfectly dry while the Cement is hot.

The above roof to be applied by the Warren-Ehret Company, and guaranteed by them against natural wear and tear for a period of ten years.

ETERNITY TILE ROOFING—Is perhaps the highest-priced roofing on the market, but it is also unquestionably the very highest grade of roofing. For buildings of which the roofs would be subjected to traffic it has no equal, as it will not chair- or heel-mark like a Mastic Asphalt. The roof is built up on Five plies of Acme Felt, similar to the Slag Roof, and the whole surface is covered with a 6" x 9" x $\frac{7}{8}$ " Vitrified Tile.

For Hotels, Casinos, Department Stores and Office Buildings, or wherever the roof is to be used as a roof garden, cafe or restaurant, or for a recreation ground for employees, this Tile Roof will fulfill every requirement.



EHRET'S
ETERNITY
TILE ROOFING

SPECIFICATION FOR EHRET'S ETERNITY TILE ROOFING

—Mop the entire surface of the concrete with a heavy mopping of Diamond Brand Roofing Cement. Commencing at the eaves or valley, make the first course full six thicknesses or layers of Acme Brand Felt; then lap each successive layer over the preceding layer so that at all points of the roof there will be not less than five plies of felt, laid shingle fashion. Thoroughly mop the surface between the layers of felt the full width of the lap with a heavy mopping of Diamond Brand Roofing Cement, in no case applied hot enough to injure the woolly fibre of the felt.

The weight of Acme Felt to be not less than 14 pounds per 100 square feet, single thickness. The amount of Diamond Brand Roofing Cement used, including the mopping of the concrete and between the plies of felt, should be not less than 14 gallons per 100 square feet.

Upon this surface place a hard vitrified tile, 6" x 9" x $\frac{7}{8}$ ", set in a mastic cement with joints $\frac{3}{8}$ " wide, grouted with Portland Cement Mortar. The Tile to be laid with broken joints.

The above roof to be applied by the Warren-Ehret Company, and guaranteed by them against natural wear and tear for a period of ten years.

The National Roofing Co.

Manufacturers of Roofing and Paint

NEW YORK OFFICE
59 Pearl Street
M. A. del Cueto, Manager

Factories and General Offices
TONAWANDA, N. Y.

PITTSBURGH OFFICE
607 Publication Building
Morris Ayrault, Manager

Distributors

PROVIDENCE, R. I., Narragansett Supply Co., 877 Eddy Street
MILWAUKEE, WIS., Cream City Roofing & Paint Mfg. Co.
BINGHAMTON, N. Y., The Gillett-Barnes Co., 91 State Street
BALTIMORE, MD., Clarke Asphalt Roofing & Paint Co., 546 Monument Street, East

BOSTON, MASS., John M. Carrecabe, 78 High Street
DETROIT, MICH., Case Supply Co., 100 Jefferson Avenue
LOUISVILLE, KY., Central Paint & Roofing Co., 314 West Main St.

PRODUCTS—PREPARED ASPHALT ROOFINGS SURFACED WITH GRAVEL AND FELDSPAR ROCK, including SECURITY WIDE-WELD ROOFING: "SPARKLOID," "DIAMOND GRIT," "CRYSTALITE," "ROYAL," "STANDARD," "LIBERTY." Also, MICA-BACK RUBBER ROOFING, ASPHALT ROOFING CEMENT, ASPHALT WATERPROOFING COMPOUNDS AND FELTS; ROOF, GENERAL AND TECHNICAL PAINTS AND COATINGS

SECURITY WIDE-WELD ASPHALT ROOFING

—Security Wide-Weld Roofing is made of felt saturated with asphalt, 32 and 36 inches wide. The thickness consists of two layers of felt and two of natural mineral asphalt, together with one layer of white sea gravel or feldspar. Each sheet is lapped over the 6-inch ungraveled margin of the sheet below and welded to it with hard hot asphalt cement, thus effectually covering all nail heads.

The 6-inch joint cannot leak and is *patented*.

ASPHALT-CEMENT WELD—HOW MADE

—In the illustration at the right the indication of the lettering is as follows:

A—Upper portion of a sheet of Security Roofing lying on the roof;

B—Lower portion of sheet lying next above on the roof, turned back to show ungraveled margin of sheet "A";

A-1—Bottom layer of lower sheet of asphalt-saturated felt, 36 inches wide, extending four inches beyond other layers and along the upper edge or margin of the entire sheet or roll of roofing;

A-2—Full thickness of two layers of felt and two of natural mineral asphalt, 32 inches wide, extending two inches beyond the surfacing, and covered with tissue-paper tape to prevent sticking in the roll. The nails are driven through the full thickness of the roofing as shown in the illustration;

A-3—Gravel-surfaced portion of sheet A, 30 inches wide, composed of two layers of asphalt-saturated felt, two of mineral asphalt, one of white sea gravel (coarse or fine feldspar if preferred).

In applying the roofing, A-1 and A-2 are covered with a thick layer of hard asphalt-cement (hot) and B is then brought down over the entire six inches and welded firmly to it. This makes one unbroken sheet of gravel-surfaced roofing with all nail heads covered, giving a continuous one-piece roof without a nail hole in it.

THE FELT—Security Roofing Felt is a special high-grade, long-fibered wool variety, saturated with natural mineral asphalt which we refine by our own formula, the result of over 20 years' experience. No coal tar or coal tar products are used in the composition of our roofings.

"A.B.C." SYSTEMS



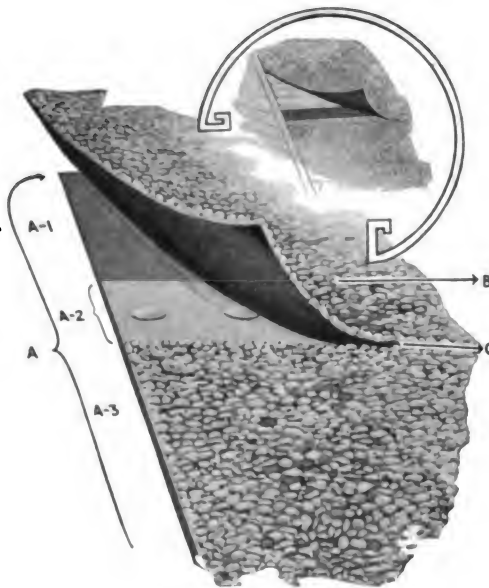
SURFACING—A final layer of white sea gravel or crushed feldspar rock is permanently imbedded in the last or upper heavy layer of natural mineral asphalt cement. This construction contributes to the durability, weatherproofing and fire-resisting qualities of all our roofing.

Security Roofing is made in three styles: Gravel Surface, Coarse Feldspar and Fine Feldspar Surface. We can also furnish burlap insertion for siding or for roofs of over one-half pitch.

Security Roofing is admirably adapted for all classes of roofs and easily applied by any intelligent workman. No need of painting and repairs. The natural color of our roof surfacings may, however, be changed as desired by applying our "Asphaltus" Coating or "Permanent" Paint.

GENERAL ASPHALT ROOFINGS

—We manufacture a full line of General Asphalt Roofings, including our "Sparkloid," "Diamond Grit," "Crystalite" and "Royal," surfaced with crushed feldspar. Also our "Standard" and "Liberty" brands, which are heavier in weight and surfaced with white sea gravel. None of the above roofings, however, have the patented six-inch joint.



6-INCH CEMENT WELD

PAINTS AND COATINGS—Following is our line of Roof, General and Technical Paints: "Asphaltus," a special asphalt coating; "Permanent" Paint, for felt or rubber roofing; "Natroco" Paint, a lead, zinc and linseed-oil paint for buildings; "Retaw" Waterproofing, for stucco, brick or stone construction; "Hydrolite" Liquid Waterproofing, for the aggregate, stucco and concrete construction; "Corporation" Paint, a pure oxide paint for buildings, wood or metal; "National XX Graphite" Paint, for bridge and structural iron work, stacks, engines and machinery; Asphalt Casting Dip; Shingle Stains.

FIRE-RESISTING QUALITIES—Our Roofings are approved by the National Board of Fire Underwriters.

ESTIMATES—Catalogs, color cards and samples of any of our products will be cheerfully furnished.

The Lincoln Waterproof Cloth Co.

Manufacturers of Prepared Roofing and Roof Coating

Western Office
First National Bank Building
CHICAGO, ILL.

GENERAL OFFICES AND FACTORY
BOUND BROOK, N. J.

Eastern Office
John Hancock Building
178 Devonshire Street
BOSTON, MASS.

PRODUCTS—LYTHOID ROOFING, TRYON ROOFING, LINCOLN FLINT-COATED ROOFING, AND CARBORINE ROOF COATING

LYTHOID ROOFING—A ready-made patented composition roofing that will not run in hot weather or pull or break in cold weather, or swell, wrinkle or crack under any other atmospheric changes.

For **RESIDENCES** Lythoid makes a substantial, attractive appearance, a half-round molding being used on the seams instead of the usual caps and nails. One- or two-ply may be used, laid from ridge to gutter.

For **FACTORIES** Lythoid cannot be surpassed. It is more durable than the gravel roof generally used, and cheaper because of the large saving of labor in applying. It is much cheaper to keep in repair. Two- or three-ply may be used.

For **BARN**s Lythoid, laid from ridge to gutter, presents an appearance that cannot be obtained with shingles. This roofing cannot catch fire by sparks or embers from a locomotive, burning stack or building. One- or two-ply may be used.

For **PORCH ROOFS, GUTTERS, etc.**, Lythoid will wear better than tin as it cannot rust or decay.

For **POULTRY HOUSES** Lythoid is very satisfactory as it is windproof, verminproof and ratproof. One-ply is all that is required.

SIMPLE TESTS—A sample of Lythoid Roofing with three other well-known brands were placed in an oven which was heated to summer-sun temperature and held at that degree for a short time. Upon examination, Lythoid was *unaffected* by the heat, whereas the oily nature of the other brands caused an evaporation which condensed on the mica cover laid over the oven. At a little higher temperature, the evaporation was so rapid that it could be readily observed, and the skin coating on the samples, except in the case of Lythoid, became soft and bubbled. This action kept increasing, and when the heat in the oven was 175 degrees Lythoid was still unaffected, whereas the other samples had lost their skin coat entirely and most of their saturation.

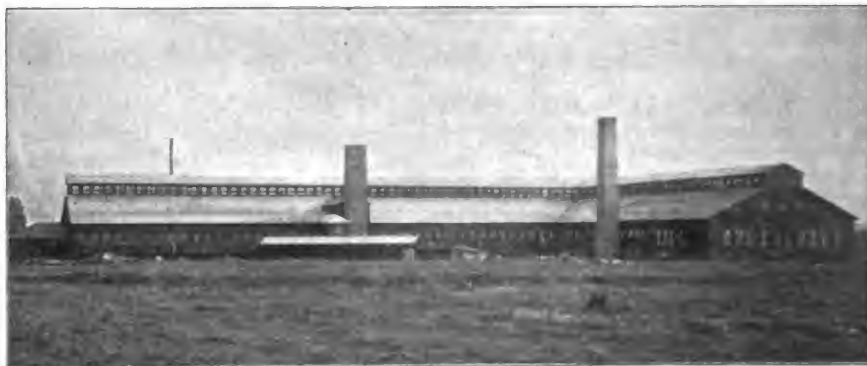
Note—Anyone can make the above experiment by simply attaching samples of Lythoid and any other prepared roofings to a board and holding them close to a heated stove.



Another simple test was made by placing together three square-shaped samples of the same roofings used in the previous test to contrast them with a sample of Lythoid. These four quarters were placed together with corners adjoining and the sun's rays focused with an ordinary reading glass on the junction point. Evaporation soon commenced, and shortly thereafter the three samples of the other roofings gave up their skin coat, whereas Lythoid remained entirely unaffected.

The above tests clearly demonstrate that Lythoid Roofing is unaffected by heat that is far beyond the point that roofing is called upon to endure.

Note—An ordinary reading glass is all that is required in the above test.



BOX FACTORY OF THE GREENE-COLMAN CO., ROCKFORD, ILL., COVERED WITH LYTHOID ROOFING

GUARANTEE—We guarantee Lythoid Roofing for **FIVE YEARS (UNPAINTED)** against defects in workmanship or material, providing that it is laid according to our instructions accompanying each roll.

This guarantee does not cover injury caused by extraordinary conditions of the elements or arising from leakage on account of holes being torn in it by violence, accident or other causes beyond our control.

Note—Other so-called guarantees call for painting of the roof within anywhere from one to two years. We guarantee Lythoid Roofing for five years without paint; and if painted every four or five years after this guaranteed period with our **Carbonine Roof Coating**, it will last indefinitely.

FACILITIES—We always keep a large stock on hand and can fill large orders promptly and ship immediately.

PRICES, SAMPLES AND REFERENCES—Will be furnished upon application to our main office or nearest agent in your locality.



Flintkote Manufacturing Company

Offices
NEW YORK—66 Beaver St.
CHICAGO—Peoples Gas Building
NEW ORLEANS—Hennen Building

88 PEARL STREET
BOSTON, MASS.

Factory
RUTHERFORD,
NEW JERSEY

PRODUCTS—REX FLINTKOTE AND PARADUX CANVAS ROOFING; IBEX AND RUTHERFORD BLACK INSULATING PAPERS; TUNALOID DAMP PROOFING, FLINTKOTE PLASTIC FOR WATER PROOFING

SPECIAL PARADUX—TECHNICAL DESCRIPTION—Special Paradux is a high grade, uniform quality Canvas Duck, thoroughly saturated on the underside and coated with neutral, non volatile waterproof products which permeate every fiber of the canvas, filling all interstices and making the coating one with the canvas. It will not grow brittle but will retain its pliability and waterproof qualities for years. It will withstand action of acids, fumes, gases and decay. It is eminently suited for covering piazza roofs, floors, decks, roof gardens, etc. It is elastic, very tough and better wearing than any similar product made for the same purpose, and is also very quiet, absorbing the noise of raindrops, footsteps, etc.



boards, which act as insulators against heat and cold. 6. It prevents the roofing from sticking in the roll. This is of particularly great advantage when rolls are shipped to warm climates.

REX FLINTKOTE—Roofing can be laid on any size or shape of roof.

In order to overcome the necessity for using tin caps, with a consequent tendency to "cup" rust and cut the roofing and show metallic surface to mar the effect, we have developed the Rex Flintkote Cap, which is a patented square cap made of the same materials as the roofing, specially tempered, and with a small center puncture to receive the nail. By the use of these caps fifty per cent greater strength is added to all lap and butt seams.

Packed	Dimensions	No. of Squares (100 Sq. Ft. Surface) Covered	Margin for Laps (Side Overlap) and Butts (End Overlap)	Weight	Price Per Square
Single rolls	43' x 60"	2	15 sq. ft.	53 lbs.	\$9.00
Half rolls	21 1/2' x 60"	1	8 sq. ft.	31 lbs.	.....

SPECIAL PARADUX—Can be laid either up and down or across the roof. We recommend its being laid across, except in cases where roof is practically flat; then it must be laid up and down. When laid up and down, strips can be nailed over the seams so as to produce the effect of wide panels.

After Special Paradux is applied it should be painted according to instructions in "Specifications."

REX FLINTKOTE ROOFING—It is one of the oldest, highest quality, thoroughly uniform, satisfactory and dependable roofings on the market. It has withstood every reasonable test that a roofing is called upon to stand. It is proof against acids, fumes, gases, heat, cold, storm, blizzard, corrosion, decay, and is also a wonderful fire retardant.

TECHNICAL DESCRIPTION—Rex Flintkote is made in one piece. Its base is a specially selected wool felt of great strength, uniform thickness and weight; and is thoroughly saturated with triple distilled, chemically neutral, non-volatile, waterproofing compounds, which percolate every shred and fiber, preserving them indefinitely. On each side of the saturated felt there is applied, by a special process, an outer coating which forms an impervious elastic envelope over the entire surface of the felt. The envelope and the felt form a perfect union and cannot be separated. Finally, on the underside of this "envelope" there is put a layer of finely pulverized flint, which grips and is gripped by elastic coating.

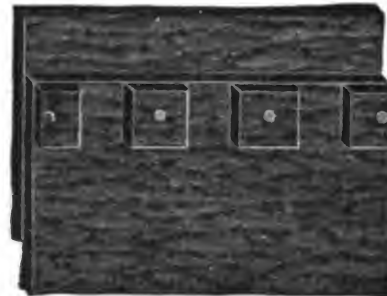
This flint coating has the following advantages: 1. It protects surface of coating from attack by resinous pitches in timber. 2. It permits FLINTKOTE to be laid on green timber. 3. It neutralizes attack of acid and alkali fumes. 4. It prevents dry rot in roof boards. 5. It forms myriads of small air pockets between the roofing and under



ROLL "REX FLINTKOTE ROOFING"

Packed	Dimensions	No. of Squares (100 Sq. Ft. Surface) Covered	Margin for Laps (Side Overlap) and Butts (End Overlap)	Weight	Price Per Square
Single Rolls	36' x 36"	1	8 sq. ft.	1 ply 25 lbs. 1 ply 35 lbs.	\$1.75 2.25
Double Rolls	72' x 36"	2	16 sq. ft.	2 ply 45 lbs. 3 ply 55 lbs.	3.25 4.00

"A.B.C." SYSTEMS



UPPER SURFACE "REX FLINTKOTE ROOFING" WITH "REX FLINTKOTE CAPS" IN POSITION



UNDER SURFACE "REX FLINTKOTE ROOFING," SHOWING FLINT COATING

SPECIFY—"Rex Flintkote Roofing" for any exposed roof. "Special Paradux" for piazza roofs, window roofs, roof gardens, balcony floors, decks, etc.

SPECIFICATIONS—1. Roof shall be thoroughly freed from all loose dirt, nails, etc., and all large cracks and holes filled so as to give smooth and level surface.

2. "Rex Flintkote Roofing" shall be laid with flint side down. "Special Paradux" shall be laid with canvas side up.

3. Nails shall be driven 1/2" from edge and 1 1/4" apart. Begin nailing in middle of strip and work towards ends.

4. Roofing shall be thoroughly and evenly cemented between laps and butts. On ordinary work lap of 2" and butt of 4" shall be allowed. In cementing care shall be taken that no cement be allowed to ooze out beyond the edge, and in cases where this does happen oozed parts shall be thoroughly wiped off. Care shall be taken to have cement perfectly even and thick enough to make a watertight joint.

5. When laying roofing across slope always commence at gutter and lay roofing parallel to same. Outside edge shall be secured with wooden or metal cleat or simply with nails.

6. Flashings, Laps and Butts. Flashing shall extend up wall for at least 5", and shall be thoroughly cemented on underside and carefully nailed. Seam next to wall shall be fastened on wall coping with a strip, or wooden batten. Two successive butts shall not come side by side on parallel strips. Allowance shall be made for laps, butts and turn-ups so as to include all projections and unevenness of roof.

7. In finishing at ridge pole top sheet of roofing shall be carried across ridge, and outside edge split for about two inches so as to make even lap when roofing is carried over eaves. As extra reinforcement, a strip about eighteen inches wide shall be run on top of ridge.

8. To line gutters, outside edge shall be secured with wooden strip and the inside carried on to the roof six or eight inches, lapping the roofing up over this. Care shall be taken in cementing to make tight joints so as to avoid backwater.

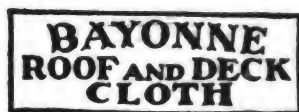
9. After "Special Paradux" has been laid, all laps and butts shall be painted and allowed to dry, then entire roof shall be painted. Paint used shall be "REX PRESERVATIVE COATING."

John Boyle & Co., Inc.

Manufacturers of Bayonne Roof Cloth And Cotton Duck Awning Stripes

112-114 DUANE STREET
 70-72 READE STREET
 NEW YORK, N. Y.

Branch House
 202-204 MARKET STREET
 ST. LOUIS, MO.



TRADE MARK



TRADE MARK

PRODUCTS—"BAYONNE" AND "GULF STREAM" BRANDS OF ROOF AND DECK CLOTH; COTTON DUCK AWNING STRIPES; PLAIN AND PREPARED CANVAS FOR ALL ROOFING PURPOSES

"GULF STREAM" ROOFING CANVAS—For Piazza and Porch Roofs, Decks, Floors, etc. This is the standard brand of white canvas and is made in all weights and widths.

"BAYONNE" ROOF AND DECK CLOTH—A processed canvas for roof and porch covers so prepared as to be absolutely waterproof. Our process preserves the cotton fiber and, being treated under pressure, the duck is thoroughly permeated, and, therefore, will not peel as paint does. Furthermore, paint has a tendency to destroy the cotton fiber, while the Bayonne process overcomes this and, consequently, enhances the life of the Roof.



METHOD OF APPLYING
 "BAYONNE" ROOF AND DECK CLOTH

HOW TO LAY "BAYONNE" ROOF AND DECK CLOTH—Bayonne Roof and Deck Cloth is applied similar to the Gulf Stream Roofing Canvas, except that the Bayonne Cloth is not laid in wet paint, nor are the edges to be painted while laying. After the roofing is laid but one coat of paint need be added, or, if there will be considerable walking over the roof, we recommend two coats.

HOW TO LAY "GULF STREAM" ROOFING CANVAS—Paint the wood roof or deck with one coat of lead-in-oil paint and lay the canvas while the paint is wet. Tack the canvas while being held taut (rolling each strip on a stick is effective).

Laps of canvas to be at least 1½ inches. Tacks to be not more than ¾ of an inch apart. After canvas is laid, it is to be painted with at least two coats of lead-in-oil paint, one coat immediately and the other as soon as the first coat is dry.

Be sure to paint edge of canvas before laying the adjoining lap over it.

LIST PRICES OF "BAYONNE" ROOF AND DECK CLOTH PER YARD

Width	Fabric 1287	Fabric 1288	Fabric 1299
30-inch	.59	.74	.86
36-inch	.68	.82	.95

Subject to discount. The above widths carried in stock. Other widths processed to order.

LIST PRICES OF "GULF STREAM" ROOFING CANVAS PER YARD

Widths	Grades			
	D	F	H	J
26-inch	.45	.39	.35	.29
30-inch	.52	.45	.40	.33
36-inch	.62	.54	.48	.40

Subject to discount. Other widths quoted on application. For decks or roofs where there will be considerable walking, specify grades D and F. If no walking on roof, then grades H or J will be satisfactory.

SAMPLES AND NET PRICES—Sample book A-9 and net prices will be forwarded upon application.

APPLICATION—The porches of many institutions and residences are now covered with this material. It has in every case fully proved what we claim for it. Architects are specifying "Bayonne" Roof and Deck Cloth, being thoroughly convinced that it is superior to anything heretofore used for the purpose.



IDENTIFICATION AND GUARANTEE LABEL

COTTON DUCK AWNING STRIPES—"BOYLE'S" guaranteed Awning Stripes have been the standard for over fifty years.

They are the best-looking and longest-wearing stripes, and retain their colors better than any others.

Awnings made from this cloth are guaranteed to give permanent satisfaction.

"A.B.C." SYSTEMS

Elaborated Roofing Company

Manufacturers of Patent Ready Roofing and Floor Covering

MAIN OFFICE 4417 WENTWORTH AVENUE

CHICAGO, ILL.

CHICAGO DISTRICT OFFICES
MAIN OFFICE: 4417 Wentworth Ave.
BRANCHES: 3255 N. Ashland Ave.,
2164 Ogden Ave.
8928 Commercial Ave.
FACTORY: 4401-23 La Salle Street
CLEVELAND DISTRICT OFFICES
MAIN OFFICE: 6015 Lorain Ave.
BRANCH: 5207 Euclid Ave.
FACTORY: W. 68th St. and Camden Ave.



BRANCHES
CLEVELAND, OHIO
QUINCY, ILL.
INDIANAPOLIS, IND.
MILWAUKEE, WIS.
DETROIT, MICH.
BATTLE CREEK, MICH.
EVANSTON, ILL.
CHICAGO HEIGHTS, ILL.

PRODUCTS—ELABORATED PATENT READY ROOFING AND FLOOR COVERING, PATENT CHIMNEYS FOR RIDGE USE

DESCRIPTION—The Elaborated Ready Roofing and Floor Covering is a patented composition composed of a wool-felt foundation saturated with a secret compound boiled through the felt with a very heavy asphalt coating on the weatherside and underside as well. In order that the perfect standard of this product may be maintained we find it necessary to keep the process of manufacture a secret.

We emphasize that **Elaborated Ready Roofing** contains no rubber to rot it, or tar to melt and run, or gravel that usually comes off in the second year; further, that it has no layers or plies, thereby avoiding the peeling off or cracking of its surface.

It is thoroughly fireproof, waterproof and dampproof, and not affected by heat or cold, it being a non-absorbing and non-conducting roofing material.

Elaborated Ready Roofing comes in three different thicknesses; each roll is 32 inches wide, and allowing 2 inches for laps contains 108 square feet, making practically one regular square of roofing.

This asphalt coating is so thick that it is not possible with the use of a chisel to strike through to the wool-felt foundation, for the coating is the same on the top and underside of the felt. It wears for years without additional expense for recoating. (See illustration.) **Elaborated Roofing** carries a **five-year guarantee** on a roof made and laid by us.

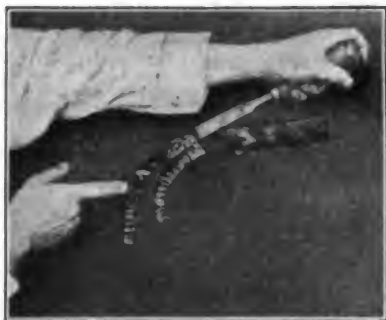
The tensile strength of this roofing is over 800 pounds per square foot.

ELABORATED ROOF CONSTRUCTION—The strips of roofing are laid mostly following the pitch of the roof, lapping two inches, and are nailed down to the roof boards. All laps are covered with **Elaborated Roofing Cement** to protect the nail heads from rusting and secure a watertight roof.

"A.B.C." SYSTEMS



SHOWING FINISHED PITCHED ROOFING APPLIED



ELABORATED COATING



TEST OF 270 LBS. WEIGHT

On pitched roofs we line all valleys and gutters separately, cementing them to the roof, which avoids the annoyance and cost of painting them yearly. Porches, baywindows and projections are also flashed into the main walls without the use of tin, iron, tarpaper, shingles or slate, all of which are more or less liable to decay.

OLD ROOFS RECONSTRUCTED—On flat tar and gravel roofs we remove the gravel completely and lay our roofing as described above. On shingle roofs our roofing is laid on top of the shingles because this gives a solid foundation, yet avoids dryrot because a complete circulation of air takes place at all times.

FLOOR COVERING—Elaborated Roofing can be used for floor, sidewalk and stair covering. We call attention to the flooring of the Riverside Park Chutes, Chicago, Ill., 318 feet long and 24 feet wide. One inch of water runs over this flooring for 8 or 9 hours daily, for six months of the year, and during winter it lies completely exposed to the weather.

This is the severest test required of any roofing material, yet, the grade used in the above case is our usual medium weight, the same that covers 10,000 roofs in Chicago.

REFERENCES AND PRICES—Will be furnished upon application.

H. W. Johns-Manville Co.

ALBANY
ATLANTA
BALTIMORE
BIRMINGHAM
BOSTON
BUFFALO
CHICAGO
CINCINNATI

CLEVELAND
DALLAS
DETROIT
DULUTH
HOUGHTON
HOUSTON
INDIANAPOLIS
KANSAS CITY

LOS ANGELES
LOUISVILLE
MEMPHIS
MILWAUKEE
MINNEAPOLIS
NEWARK, N. J.
NEW ORLEANS
NEW YORK

OKLAHOMA CITY
OMAHA
PHILADELPHIA
PITTSBURGH
PORTLAND, ORE.
RICHMOND, VA.
ROCHESTER
SAN FRANCISCO

SEATTLE
ST. LOUIS
ST. PAUL
SYRACUSE
TACOMA
WASHINGTON
WILKES-BARRE

ASBESTOS

For our Catalog on Building Materials see Section 6C, Cat. 3

For our Catalog on Pipe and Boiler Coverings see Section 28D, Cat. 2

For our Catalog on Refrigerating Machines and Insulating Materials see Section 32A, Cat. 5

For our Catalog on Electrical Materials see Section 42, Cat. 6

PRODUCTS—Roofing Materials: J-M ASBESTOS READY ROOFING AND SIDING, J-M BUILT-UP ASBESTOS ROOFING, J-M CORRUGATED ASBESTOS ROOFING, J-M TRANSITE ASBESTOS SHINGLES, J-M REGAL READY ROOFING

J-M ASBESTOS READY ROOFING—

DESCRIPTION—The basis of J-M Asbestos Roofing is pure asbestos. This mineral is made into sheets of asbestos felt, after which, each sheet is individually saturated. The sheets are then securely cemented together with genuine Trinidad Lake Asphalt, and the result is a solid, homogeneous mass of asbestos (stone) and asphalt (mineral)—making a roofing that is *all mineral all the way through*.

From the crude materials to the finished product, every process in the manufacture of this roofing is directly under our own supervision. This enables us, with our experience of over half a century in the manufacture of roofings, to maintain a uniformly high standard in quality, and to manufacture and sell this roofing at low prices.

ADVANTAGES—To all intents and purposes, J-M Asbestos Roofing is solid stone—with the everlasting qualities of stone. It is absolutely fire-proof, and contains nothing that can rust, rot, melt, crack or deteriorate with age. Even gases and chemical fumes do not affect it. This roofing is still in good condition on buildings in all parts of the country, after more than a quarter century of service.

J-M Asbestos Roofing will not burn like shingles and ready roofings made of organic materials; will not rot, crack or warp like shingles and other prepared roofings; will not crack and blow off like slate and tile; will not rust like tin and galvanized iron; will not melt and run, or dry out and blow away like slag and all organic composition roofings, and has no gravel to be washed or blown off and clog up outlets.

Like all stone, this roofing never needs coating, gravel or any other protection. J-M Asbestos Roofing is cheaper in first cost than slate, shingles, tin or iron, and costs less per year of service than any other roofing.

The white top weather surface of this roofing gives it a neat and attractive appearance and reflects the heat, which, together with the great insulating quality of the Asbestos, makes buildings from 15 to 30 degrees cooler in hot weather than any other roofing—the exact difference in temperature depending, of course, on what the other roofing is.

As this roofing has a smooth surface, any leaks, which may be caused by nails protruding from the roof boards, or by carelessness on the part of workmen, can be readily located. It is difficult to locate leaks in gravel or slag roofings, as the leaks do not always show directly under the defect in the roofing, making it necessary to virtually tear off these roofings to find the leak.

Another advantage in the smooth surface of J-M Asbestos Roofing is that it sheds water more rapidly than gravel or slag roofings, thus avoiding frost. Frost causes much damage to gravel and slag roofings, as it loosens the gravel and opens up the plies.

J-M Asbestos Roofing is shipped ready to apply, with nails, Lap Cement and full instructions for applying, packed in each roll. Large-headed nails are furnished, doing away with the necessity of using un-

sightly tin caps which quickly rust out. The nails supplied are extra heavy galvanized, protecting them from rust. The J-M Lap Cement furnished is far superior to the ordinary kind, and requires no heating or any preparation, being all ready for the brush.

BRANDS—Although we furnish a variety of brands of J-M Asbestos Roofing, it should be distinctly understood that *there is but one quality*. The difference between the brands consists only in the number and arrangement of the plies. Where maximum durability is desired, the four-ply brand is recommended, while for lighter and more temporary construction, the lower priced grades will be found satisfactory.

HEAVY BROOKS BRAND—An all Asbestos and Asphalt Four-Ply Roofing, shipped in flat sheets 32 x 82 inches, so that it will always lie flat. Does not require unrolling. This roofing is suitable for steep surfaces, laid white side to the weather. On flat surfaces having a pitch of less than 2 inches to the foot, the black side should be laid to the weather.

THREE-PLY BROOKS BRAND—A very permanent roofing when laid over good, smooth sheathing boards. While not as serviceable as Heavy Brooks Brand, owing to its lighter weight, it is made of exactly the same materials. Furnished in 2 square rolls, 32 inches wide.

HOW TO SPECIFY—STANDARD J-M ASBESTOS ROOFING SPECIFICATIONS. The roof surface to be made ready by owner or his contractor having the work in charge, with dry seasoned sheathing boards of uniform thickness and to be laid closely; tongued and grooved sheathing preferred. All nail-heads, knots, or flaws in the sheathing to be made smooth, and the sheathing swept clean before commencing the application of the roofing.

Work to be commenced at the eaves or gutters, running the roofing parallel with the same, applying the roofing in sheets not more than 20 feet long, lapping the perpendicular seams 3 inches and the horizontal seams 2 inches, breaking the joints. J-M Asphalt Lap Cement to be applied between the laps, after which the roof shall be nailed with large-headed ($\frac{1}{2}$ inch) galvanized nails ($\frac{1}{4}$ -inch shank) nailing $\frac{3}{4}$ of an inch back from the edge, 2 inches apart, center to center. After nailing is completed, seams are to be coated with J-M Asphalt Lap Cement.

All valleys and wooden gutters to be covered with the roofing specified. Material to be placed in same so that the sheet runs lengthwise with the valley or gutter, so that no unnecessary laps or joints will occur in the same.

Base flashings shall be composed of the same material as the roofing, made from a sheet 10 inches wide, placing 5 inches on the flat part of the roof and 5 inches on the upright, cementing solidly to the upright work with J-M Asphalt Cement, after which the flashing shall be nailed in the usual manner. Cap flashing to be composed of J-M Asbestos-tile Cement, which shall be troweled to the wall and over the base flashing, and while soft a layer of Single-Ply Asbestos Felt, 5 inches wide, weighing not less than 9 lbs. to 100 square feet, shall be embedded in same; over this shall be troweled another layer of J-M Asbestos-tile Cement. All brick walls, chimneys and upright work to be flashed with the J-M Asbestos-tile system.

J-M ASBESTOSIDE—

DESCRIPTION—J-M Asbestoside is a wall siding for factories, warehouses, barns, etc., made of the same material as J-M Asbestos Roofing, previously described, and has the same advantages. It is recommended as a siding in place of clapboards, shingles and sheet iron wall coverings, because of its lower first cost, greater durability and weatherproof and fire-resisting properties. J-M Asbestoside occupies the same position with respect to other siding materials as J-M Asbestos Roofing does in the roofing line. It can be easily, cheaply and quickly applied. It adds to the attractive appearance of a building, and requires no coating or painting. Regularly furnished in flat sheets, 32 x 50 inches, and 16 x 50 inches, or cut to smaller sizes, if desired.

J-M Asbestoside is shipped in crates, complete with special large headed galvanized nails. These nails avoid the necessity of tin caps and give a very neat finish to the building.

BRANDS—J-M Shield Brand. Composed of four separate plies of asbestos felt.

J-M STAR BRAND. Similar to "Shield" Brand, except that it has three plies of asbestos felt instead of four.

J-M BUILT-UP ASBESTOS ROOFING—

DESCRIPTION—This roofing is built-up on the roof of successive layers of Pure Asbestos Felt and genuine Trinidad Lake Asphalt. It is especially recommended for flat roofs or for use over concrete.

ADVANTAGES—Like J-M Asbestos Ready Roofing, previously described, J-M Built-up Asbestos Roofing, due to its *all-mineral* construction, is absolutely fire-proof, rust-proof, rot-proof, acid-proof, gas-proof, heat-proof and cold-proof, and never needs coating, gravel or slag to protect it from the elements.

J-M Asbestos Built-up Roofing also has all the other advantages of our Ready Roofing above mentioned.



Showing Detailed Application of J-M Built-up Asbestos Roofing, Black Surface (on Sheathing Boards).

HOW TO SPECIFY—J-M Built-up Asbestos Roofing, BLACK Surface, for application on sheathing. Remove all loose nails, chips and other rubbish, leaving the surface perfectly clean. See that all ends of boards are resting on a joist or purlin, so that they cannot spring. If edges of boards are curled up, properly draw them down and smooth off any projections. See that all knot holes are covered or filled up before commencing to lay roof, constructed as follows:

First lay one thickness of J-M Salamander Brand two-ply roofing, consisting of one saturated sheet of asbestos weighing not less than 14 lbs. per square, and one sheet of unsaturated asbestos weighing 4 lbs. per square, properly cemented together at the factory with J-M Ajax Brand of refined asphalt, the Salamander felts to be lapped two inches, with the unsaturated sheet next the sheathing boards and thoroughly cemented at the laps; this ply to be nailed with 7/8-inch barbed nails driven through flat tin caps at intervals of 6 inches. After this ply is in place, mop the entire surface with J-M Ajax Brand Asphalt, and while thoroughly hot, imbed into it two plies of J-M No. 2 Saturated Asbestos Ajax Felt, these felts to be rolled close behind the mop so that no possible missing of asphalt can take place. The two upper plies of felts (32 inches wide) shall each have 15 inches exposed to the weather, the first to be nailed with barbed nails and flat tin caps along the upper edge of the sheet at intervals of 9 inches, and in such a manner that all nails shall have two plies of felt over them.

"A.B.C." SYSTEMS

All flashings, except flashings around ventilators, standpipes, exhausts, etc., to be composed of base flashing of Special Manville Roofing at least 10 inches wide, cemented and nailed to the wall, same to be counterflashed with a 10-inch strip of Special Manville Roofing inserted at least 4 inches in the wall during erection of same, or counterflashed with our Asbestile System.

After the roof is properly laid and otherwise finished, there shall be spread over it an even thickness of J-M Asphalt Liquid Roof Coating, applied cold and thoroughly brushed out, in order that the entire roof may have a black and even appearance. This coating to be carried up to the top of base flashing, and finished neatly under the lower edge of counterflashing.

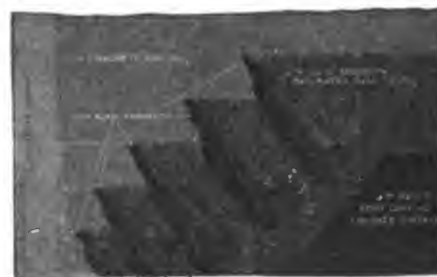


Showing Detailed Application of J-M Built-up Asbestos Roofing, White Surface.

J-M BUILT-UP ASBESTOS ROOFING, WHITE SURFACE FOR APPLICATION ON SHEATHING—

First see that boards are thoroughly swept, and the surface of the roof is properly prepared as provided for in the black surface J-M Asbestos Roofing (Built-up); then lay one thickness of J-M Salamander two-ply asbestos roofing, consisting of one ply of J-M saturated asbestos felt weighing 14 lbs. per square, and one J-M unsaturated sheet weighing 4 lbs. to be laid next to sheathing boards; this ply to be lapped two inches; the joints to be made with J-M Ajax Asphalt; all laps to be nailed with barbed nails and flat tin caps at intervals of six inches and through the center of the sheet at intervals of nine inches. Over this roof lay in J-M Ajax Brand Asphalt, applied hot, one ply of J-M Boston Brand Asbestos Ajax Felt (32 inches wide), the joints to come in the center of the sheet underneath, to be lapped two inches; the surface of this sheet to be thoroughly mopped with J-M Ajax Asphalt, and into it, while hot, imbed finishing ply of J-M two-ply Salamander Roofing consisting of one ply of fourteen-pound saturated Asbestos Felt and one four-pound unsaturated Asbestos Sheet; the white surface to be exposed to the weather and to be lapped 3/4 inch, to be laid so that the joints are broken with under sheets. No nails to be drawn through this upper sheet.

All base and counterflashings to be made exactly as described in J-M Asbestos Built-up Roofings, black surface. This roof needs no coating as the white surface is the finished roof.



Showing Detailed Application of J-M Built-up Asbestos Roofing on Concrete Surfaces.

BUILT-UP ASBESTOS ROOFING FOR APPLICATION OVER CONCRETE—

The owner or general contractor agrees to give the roofing contractor the deck of the building absolutely free from all obstructions and to maintain it free from all obstructions other than the materials, tools and appliances belonging to the roofing contractor, and to remove all loose nails, chips, and other rubbish, leaving the surface perfectly clean.

Continued on next page

The owner or general contractor also agrees to give the roofing contractor a smooth concrete surface, free from holes, depressions or projections, and truly graded so as to provide for the free flow of water toward gutters and down-spouts.

The guarantee on this roof is contingent upon the contractor doing the aforesaid.

Over the foregoing shall be laid a 3-ply J-M Ajax Asbestos and Asphalt Roofing to be constructed as follows:

Three plies of J-M Asbestos Felt to be Asphalt saturated and to weigh not less than 16 lbs. per hundred square feet, single thickness. The Asphalt Cement shall be the best quality Trinidad Lake Asphalt, refined by the H. W. Johns-Manville Co., known as their Ajax Asphalt Cement, and there shall be used not less than 60 lbs. gross weight per hundred square feet of completed roof.

The liquid asphalt coating shall be H. W. Johns-Manville Co.'s J-M Asphalt Roof Coating, using not less than one and a half gallons per hundred square feet of completed roof. The materials shall be used as follows:

First coat the concrete with J-M Asphalt Concrete Coating so as to form a perfect bond between the concrete and the asphalt. Then mop the surface with J-M Ajax Brand of Asphalt Cement, heated to flow freely, and into it, while hot, imbed three plies of No. 2 J-M Asbestos Saturated Ajax Felt. The entire surface between each ply shall be mopped with hot Ajax Asphalt and the felts shall be rolled close behind the mop so that no missing of asphalt can possibly take place. The felts shall be so laid that ten and one-half inches (10½") of each ply will be exposed to the weather. After the roof is so laid, the entire surface shall be coated with J-M Asphalt Roof Coating, as above, to give a uniform and even appearance.

All flashings, except flashings around ventilators, standpipes, exhausts, etc., to be composed of base flashing of Special Manville Roofing at least 10 inches wide, cemented and nailed to the wall, same to be counterflashed with a 10-inch strip of Special Manville Roofing inserted at least 4 inches in the wall during erection of same, or counterflashed with our J-M Asbestile System.

J-M TRANSITE ASBESTOS SHINGLES



J-M TRANSITE ASBESTOS SHINGLES

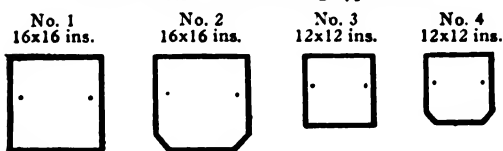
DESCRIPTION—These shingles are made by moulding pure asbestos fibers and Portland cement into a solid, compact mass, under hydraulic pressure. They have no layers or laminations to separate or curl.

ADVANTAGES—They are not affected by continued weather changes. Freezing and thawing only hasten the setting of the binding material. The more severe the weather conditions, the stronger and harder the shingles become. They never rot or decay; never warp or split.

J-M Transite Asbestos Shingles can be handled without the usual breakage. Loss due to breakage, from the time they are shipped until they are in place on the roof, is such a small factor that in ordinary work no allowance for this item is taken into consideration. They are tough and resilient—not brittle like slate and tile, and are much stronger than laminated asbestos shingles. Fire cannot, of course, burn asbestos; neither can it burn stone—Portland cement. So J-M Transite Asbestos Shingles contain nothing that can burn.

SIZES, SHAPES AND PRICES.

STANDARD THICKNESS ¼ INCH



PRICE LIST PER HUNDRED SHINGLES

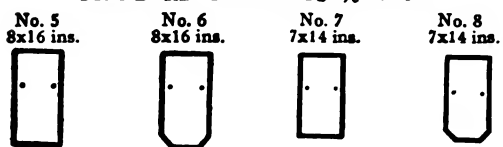
Color.	No. 1	No. 2	No. 3	No. 4
Gray	\$8.75	\$9.00	\$5.00	\$5.25
Slate	12.25	12.50	6.75	7.00
Red	12.25	12.50	6.75	7.00

WEIGHT AND NUMBER REQUIRED

	Per Finished Square	Av. Wt.
No.	Number App. Wt.	Per 100
No. 1	130 480 lbs. 7x16 ins.	370 lbs.
No. 2	130 475 lbs. 7x16 ins.	365 lbs.
No. 3	240 480 lbs. 5x12 ins.	200 lbs.
No. 4	240 470 lbs. 5x12 ins.	195 lbs.

The above table used only when figuring American method.

STANDARD THICKNESS ¼ INCH



PRICE LIST PER HUNDRED SHINGLES

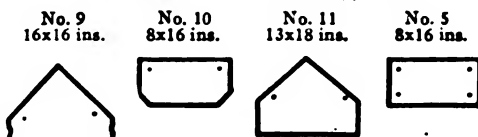
Color.	No. 5	No. 6	No. 7	No. 8
Gray	\$4.50	\$4.75	\$3.50	\$3.75
Slate	6.25	6.50	4.75	5.00
Red	6.25	6.50	4.75	5.00

WEIGHT AND NUMBER REQUIRED

	Per Finished Square	Av. Wt.
No.	Number App. Wt.	Per 100
No. 5	260 450 lbs. 7x8 ins.	175 lbs.
No. 6	260 430 lbs. 7x8 ins.	165 lbs.
No. 7	343 445 lbs. 6x7 ins.	130 lbs.
No. 8	343 430 lbs. 6x7 ins.	125 lbs.

The above table used only when figuring American method.

STANDARD THICKNESS ¼ INCH



The above style Shingles required for Diagonal Method.

PRICE LIST PER HUNDRED SHINGLES

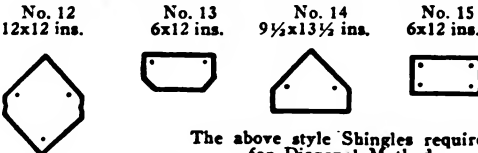
Color.	No. 9	No. 10	No. 11	No. 5
Gray	\$9.00	\$4.75	\$8.13	\$4.50
Slate	12.50	6.50	11.25	6.25
Red	12.50	6.50	11.25	6.25

WEIGHT AND NUMBER REQUIRED

	Per Finished Square	Av. Wt.
No.	Number App. Wt.	Per 100
No. 9	87 300 lbs. 13x13 ins.	350 lbs.

The weight of the squares abutting on the eaves will be slightly more, as the starting shingles are laid without laps.

STANDARD THICKNESS ¼ INCH



The above style Shingles required for Diagonal Method.

Nos. 13, 14, 15.....Eave Course Starters
 No. 12.....Main Body Shingles

PRICE LIST PER HUNDRED SHINGLES

Color.	No. 12	No. 13	No. 14	No. 15
Gray	\$5.25	\$2.75	\$4.75	\$2.50
Slate	7.00	3.75	6.25	3.50
Red	7.00	3.75	6.25	3.50

WEIGHT AND NUMBER REQUIRED

	Per Finished Square	Av. Wt.
No.	Number App. Wt.	Per 100
No. 12	160 300 lbs. 9½x9½ ins.	190 lbs.

The weight of the squares abutting on the eaves will be slightly more, as the starting shingles are laid without laps.

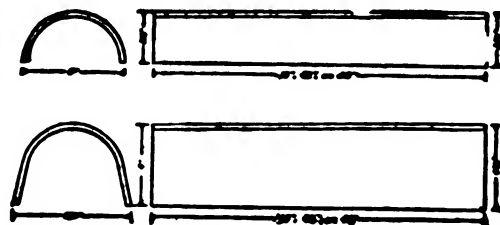


FIG. 3—END AND SIDE VIEWS OF HIP AND RIDGE ROLLS

HIP AND RIDGE ROLLS AND ACCESSORIES REQUIRED

Hip and Ridge Rolls are furnished in the standard sizes shown above.

Gray Hip and Ridge Roll.....	10 cents per lineal foot
Slate Hip and Ridge Roll.....	12 cents per lineal foot
Red Hip and Ridge Roll.....	12 cents per lineal foot
Copper Storm Nails (per 100).....	32 cents
Copper Fasteners for Ridge Roll, (per 100).....	35 cents
Galvanized Iron Needle Pointed Nails, per lb.....	6 cents
J-M Asbestos Slaters' Felt per 100 sq. ft.....	\$1.20



FIG. 4—DETAILS OF RIDGE ROLL CONSTRUCTION

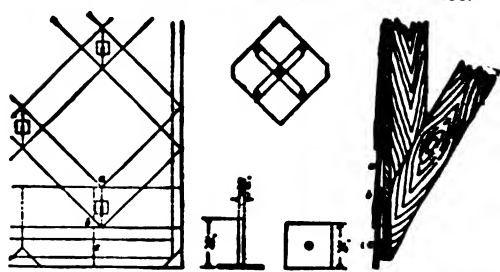


FIG. 5—SKETCH SHOWING USE OF COPPER STORM NAIL

Like all minerals or stone, J-M Transite Asbestos Shingles do not require paint or protection of any kind to preserve them. These shingles, being composed largely of asbestos, are excellent non-conductors of heat and cold. They keep a building cool in Summer and warm in Winter.

Weighing much less than slate, these shingles are much easier to handle, do not require such a heavy and expensive roof construction, and save considerable in freight.

They are furnished in uniform standard sizes and require no cutting or trimming except around the valleys, dormer windows, etc.. Are furnished punched and ready to apply.

J-M Transite Asbestos Shingles are furnished in gray, red and slate colors, and in shapes most desirable for various roof constructions. A number of the standard sizes are shown here, but we will be pleased to quote on special designs upon request.

We are prepared to furnish J-M Asbestos Shingle Coating in moss green, light green, Indian tile red, and weathered brown, where desired to color these shingles to conform to the general color scheme of the building, or where it is desired to use the ordinary gray shingle and coat them to save the expense of the solid color. This coating is intended only for decoration and is not necessary to preserve the shingle.

SPECIFICATIONS FOR APPLYING

AMERICAN METHOD—Lay roof boards in the usual manner, breaking joints and nailing securely in place, leaving no loose ends. The roof boards should be well seasoned and of narrow width. Over the roof boards lay one thickness of J-M Asbestos Slater's Felt, described on this page, laying horizontally with a 4-inch lap, and with 12-inch laps on hips and valleys.

Apply one course of No. 5, 8-inch by 16-inch shingles at eaves, lengthwise and parallel to same, overhanging the eaves about $\frac{1}{4}$ inch. Apply the second course, using same style shingle, entirely covering first course, see Fig. 2, breaking joints; after which proceed in the regular manner as with wooden shingles or slate, exposing 7 inches to the



FIG. 1—CLIPPED CORNER AMERICAN METHOD

weather, and fastening each shingle in place with at least two galvanized iron roofing nails furnished for the purpose. Over the ridges and hips apply J-M Transite Asbestos Ridge and Hip Rolls with not less than 2-inch lap, fastened in place with special ridge roll fasteners furnished for the purpose.

Where ridge pole does not project high enough above the roof boards to allow direct application of ridge roll, it is advisable to put in a false pole so that it is possible to get a direct fastening through top of ridge roll. (See Fig. 4.)

FLASHINGS—Flash all chimneys and valleys with copper or other approved material.



FIG. 2—STANDARD AMERICAN METHOD

"A.B.C." SYSTEMS

DIAGONAL METHOD—Lay roof boards in the usual manner, breaking joints and nailing securely in place, leaving no loose ends. The roofing boards should be well seasoned and of narrow width. Over the roof boards lay one thickness of J-M Asbestos Slater's Felt, described below, laying horizontally with a 4-inch lap, and with 12-inch laps on hips and valleys.

Over the felt lay J-M Transite Asbestos Shingles in the following manner: Apply one course of No. 15 J-M Transite Asbestos Shingles end to end, parallel with and overhanging the eaves about $\frac{1}{4}$ inch; over which apply one course of No. 13 shingles, entirely covering the No. 15, breaking all joints. Starter No. 14 should then be applied, exposing one-half lower course of No. 13, as shown in detail in Fig. 10.

Cover the balance of the roof with No. 12 Shingles, 12-inch by 12-inch, laid as shown, exposing $9\frac{1}{2}$ inches by $9\frac{1}{2}$ inches to the weather. Securely fasten all shingles in place with galvanized needle pointed nails, and fasten the points of the No. 12 main body shingles with special J-M Copper Storm Nails. All the main body shingles, i. e., the No. 12, should be laid with the diagonal lines on a 45-degree angle with the eaves. Over the ridges and hips apply J-M Transite Asbestos Ridge and Hip Rolls, with not less than 2-inch lap, fastening in place with special ridge roll fasteners furnished for the purpose.



FIG. 10—THE DIAGONAL METHOD OF APPLYING SHINGLES

Details of construction of the diagonal method are shown in Fig. 5, and a finished portion is shown in Fig. 10.

FLASHINGS—Flash all chimneys and valleys with copper or other approved material.

SIDINGS—These shingles are particularly adapted for the sides of all classes of buildings where fireproof materials are desired. Very attractive designs may be worked out with red asbestos shingles on the roof and gray asbestos shingles for the siding.

The diagonal method of applying shingles is advantageous on account of the small amount of material required, which means low cost and also because of the artistic effects obtainable.

J-M ASBESTOS SLATER'S FELT—As an insulating and waterproofing material between roof boards and shingles or between siding and shingles, J-M Asbestos Slater's Felt is unequaled. It is composed of pure asbestos felt, saturated with Trinidad Lake Asphalt—both minerals. Due to the total absence of vegetable, animal and organic matter, it is odorless, damp-, acid-, and weather-proof. It will not rust or rot.

It is supplied in rolls 32 inches wide. Can be put up in from one to five square rolls as desired.

J-M REGAL ROOFING—

DESCRIPTION—To meet the demand for a low-priced roofing, we are prepared to furnish J-M Regal. This is a smooth-surfaced, ready roofing, composed of high-grade wool felt, which is manufactured in our own mills, and Trinidad Lake Asphalt. The Asphalt is also processed in our own refineries, which enables us to offer in J-M Regal the best grade of "rubber" type roofing that can be made.

J-M Regal Roofing is put up in rolls of 216 square feet, with nails and J-M Roofing Cleats packed in each roll.



CLASSIFICATION PAGE OF
SECTION 27

Roofing Slate and Structural Slate. Soapstone Products

Section Synopsis

A. Standard and Special Roofing Slate all sizes and shapes
B. Slate Stairs Work; Flooring Slabs and Tile, Wainscoting, Toilet-Room Partitions, etc.; Building Work: Sills, Lintels, Hearths, etc.; Switchboards, Panelboards; Blackboards, natural slate and composition; Mausoleum Work; Dissecting and

Operating Slabs; Tanks; Laboratory Tables; Plumbers' Slate Work; Marbleized Slate Mantels and Wainscoting, etc.

C. Soapstone Register Borders, Linings, Slabs, Stair Treads, Table Tops, Sundries; Plumbers' Soapstone Work; Switchboards, Panelboards

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX			TRADE NAMES AND BRANDS						SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.
REGULAR CLASSIFICATION			"Master's Excelsior," roofing and structural slate, Catalog B 1 "Premium," slate blackboard "S-B. S.," unfading black roofing slate } Catalog A 1						
A	1 2 3 4 5 6	Roofing slate:— Black slate Green slate Purple slate Red slate Special sizes and thicknesses, <i>European method</i> Unfading black	Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
					1 to 15	16 to 30	31 to 45	46 to 60	61 to 70
B	21	Blackboards, <i>natural slate</i>	B 1	Excelsior Slate Co. Pen Argyl, Pa.	1	21	31		
	22	Blackboards, <i>artificial slate composition</i>				23			
	23	Floor slabs and tile, flat roof tile, etc.				25			
	24	Laboratory tables, sinks, etc.				26			
	25	Marbleized mantels, wainscoting				27			
	26	Mausoleum work				28			
	27	Operating slabs and mortuary tables				29			
	28	Polished slate table tops, tablets, etc.				30			
	29	Plumbers' slate work, <i>slabs, partitions, etc.</i>							
	30	Stairwork							
	31	Switchboards, panelboards, <i>electric</i>							
	32	Tanks, <i>acidproof</i>							
	33	Window sills, lintels, coping, hearths, etc.							
C	45	Soapstone:— Plumbers' work, <i>slabs, partitions, etc.</i>							
	46	Register borders, linings, stair treads, table tops, etc.							
	47	Switchboards, panelboards, <i>electric</i>							
SPECIAL CLASSIFICATION									
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.									
	61	Slate plumbing fixtures:— Sinks, washtubs, troughs, etc. (S. 35 B)	A 1	Slatington-Bangor Slate Syndicate Slatington, Pa.	1 6	21 23 24 26 27 29 30	31		61
	62	Soapstone plumbing fixtures:— Sinks, washtubs, troughs, etc. (S. 35 B)							
			Woodley Slate Co. S. 35 B, Cat. 4 (Structural slate, full line)						
			See also the Catalogs in Section 13: BUILDING MATERIALS AND GENERAL SUPPLIES.						

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 15	16 to 30	31 to 45	46 to 60	61 to 70		1 to 15	16 to 30	31 to 45	46 to 60	61 to 70		1 to 15	16 to 30	31 to 45	46 to 60	61 to 70
Albion Bangor Slate Co..... Wind Gap, Pa.	1	21 29	33 45	46	61 62	Franklin Slate Co..... Slatington, Pa.	1	21				Norton Bros..... Granville, N. Y.	2 3 4				
Algonquin Red Slate Co..... Worcester, Mass.	1 4	23 30	31 33			Gault & Son, Wm. A..... Baltimore, Md.		21 23 29 30				O'Halloran & Jacobs..... Pittsburgh, Pa.	1 2 3 4 5	21 23 29 30	31 32 33		61
Alpha Slate Mfg. Co..... Bangor, Pa.	1 4 5	21 23 29 30	31 33		61	Genuine Bangor Slate Co.... Easton, Pa.	1	21 22 23				Ontalaunee Slate Mfg. Co.... Lynnport, Pa.		24 29 30	31 33 45	46 47	61 62
Auld & Conger Co..... Cleveland, Ohio	1 2 3 4 5	21 29				Genuine Washington Slate Co. Slatington, Pa.	1	21 23 29 30	31 33			Parsons Bros. Slate Co..... Pen Argyl, Pa.	1	21 23 29	31 33		
Baltimore Peach Bottom Slate Co. Cardiff, Md.	1	23	31			Hahn, Granville..... Walnutport, Pa.	1 5	21 29 30	31 33 45	46 47	61 62	Peerless Slate Co..... Delta, Pa.	1	23 29 30	31 33 45	46 47	61 62
Bangor Slate Co., Inc..... Bangor, Pa.	1 2 4	21 23 24 29 30	31 33 45	46 47	61 62	Hammann Structural Slate & Roofing Co. Bangor, Pa.	1	21 29 30	31 33		61	Pelican Slate Mfg. Co..... Wind Gap, Pa.	1	21 23 25 29 30	31 33		
Bangor Structural Slate Co.. Bangor, Pa.	1 4 5	21 23 24 29 30	31 33 45	46 47	61 62	Hower Quarries Co..... Danielsville, Pa.	1 5	21 23 26 29 30	31 33		61	Pennsylvania Natural Slate Blackboard Co. Slatington, Pa.		21 23 29 30	31 32 33		61
Beckley-Cardy Mfg. Co..... Chicago, Ill.		21 22				International Slate Co..... Slatington, Pa.	1 4 5	21 23 29 30	3	33		Pennsylvania Structural Slate Co. Easton, Pa.	1	21 23 30	31 32 33		61 62
Bittner Slate Co..... Allentown, Pa.	4					Jackson-Bangor Slate Co.... Pen Argyl, Pa.	1					Peters & Sons, E. D..... Slatington, Pa.	1 2 4	21 23 29 30	33		61 62
Blue Mountain Slate Co..... Slatington, Pa.	1 5	21 23 24 29 30	31 32 33			Johnson Co., E. J..... New York, N. Y.	1 4 5	21 23 29 30	31 33		61	Phoenix Slate Co..... Wind Gap, Pa.	1	21 24 28 29 30	31 33		
Blue Valley Slate Mfg. Co.. Ltd. Slatington, Pa.	1	21 28 29	31 32 33		61	Jones Slate Mfg. Co., Robert L. Delta, Pa.	4					Pitts, A. L..... Arvon, Va.	1				
Bray & Co., J..... East Bangor, Pa.	1 2	21 29			61	Keenan Structural Slate Co.. Inc. Bangor, Pa.	5	21 23 29 30	31 33 45		61	Portland-Monson Slate Co.. Portland, Me.	1	23 24 28 29	31 32 33		61
Carbon Slate Co..... Slatington, Pa.	1 5	21 23 29	45	46 47		Kny-Scheerer Co..... New York, N. Y.		27				Provident Slate Co..... Slatington, Pa.	1	21 28	31		
Carbo Stone Blackboard Co.. Chicago, Ill.		22				Lehigh Structural Slate Mfg Co., Inc. Bangor, Pa.	1 5	21 23 29 30	31 33	46	61 62	Roberts, G. T..... West Pawlet, Vt.	2				
Chapman Slate Co..... Bethlehem, Pa.	1					Lloyd, W. H..... Fair Haven, Vt.	2 5					Schaeffer, R. F..... Bangor, Pa.	1	21 23 29 30	31 32 33		
Columbia Slate Co..... Slatington, Pa.	1 2 4 5	21 23 29 30	31			Lobb, Edwards & Co.. Danielsville, Pa.	1	21 23 29 30	31 33			Schoonover & Co., R. F.. Bangor, Pa.	1	21			
Columbus Slate Co..... Columbus, Ohio	1 2 4 5	21 29 30	31 33		61 62	McClellan & Co., H. G.. Chicago, Ill.	2 3 4 5	21				Sheldon Slate Co., F. C..... Granville, N. Y.	1 4 5	21 23 29 30	31 33		
Costello Co., Weber..... Chicago Heights, Ill.		22				Martin Slate Co.. Poultney, Vt.	1					Sieger & Son, Henry N..... Slatington, Pa.	1				
Crown Slate Co..... Pen Argyl, Pa.	1	21 23 24 26 29 30	31 33			Mathews Slate Co.. Poultney, Vt.	2 4 5	23 29 30	31 33		61	Slatington Slate Co..... Slatington, Pa.	1 2 3	21 29 30	31		
East Bangor Consolidated Slate Co. East Bangor, Pa.	1 2	21 23 29 30	31 33		61 62	Merrill Brownville Slate Co.. Brownville, Me.	1					Stephens-Jackson Co..... Pen Argyl, Pa.	1	21			
Eureka Slate Quarries..... Fair Haven, Vt.	2 6					Monarch Blackboard & Structural Slate Co.. Slatington, Pa.		21 23 29 30	31 33			Tinsman & Co., M. L..... Pen Argyl, Pa.	1	21 23 29 30	31 32 33		61
Excelsior Slate Co..... Pen Argyl, Pa.	1	21 23 29 30	31 33		61	Monson Maine Slate Co.. Boston, Mass.	1	21 23 29 30	31 33		61	Unger Slate Co., John F.. Slatington, Pa.		21 23 24 30	31		
Fair Haven Marble & Mar- bleized Slate Co. Fair Haven, Vt.	2 4 5	23 29 30	31 33		61	Moyer & Co., I. S., Inc.. Bethlehem, Pa.	1					Vermont Slate Co., Inc..... Granville, N. Y.	1 2 4 5	21 28 29 30	31 32 33		61
Fairview Slate Co..... Slatington, Pa.	1	21				National School Slate Co.. Inc. Slatington, Pa.		21				Williams Slate Co..... Arvon, Va.	1 2 3				
						N. Y. Silicate Book Slate Co.. New York, N. Y.		21 22									

The Slatington-Bangor Slate Syndicate

(Incorporated 1896)

Manufacturers of Slate

SLATINGTON, PENNSYLVANIA

PRODUCTS—UNFADING BLACK ROOFING SLATE

Structural Slate for all purposes: SLATE BLACKBOARDS, STEPS, RISERS, PLATFORMS; SLATE FOR ELECTRICAL WORK, ETC.

LOCATION AND QUALITY—We are located in the center of the largest slate-producing region in the world; a section ten miles long and three miles wide, embracing nearly 100 quarries. Within these limits are produced the very best quality uniform unfading big-bed slate.

Our individual output is very large, as we contract for the product quarried entirely by the year, or otherwise, so that we are at all times in a position to fill orders promptly, give our customers the best slate the market affords, and to ship without the slightest delay.

We can guarantee satisfaction and save money for our customers. **We are connected with no association or combine, and no one can fix prices for us.**

We handle big-bed slate. The slate in which we are endeavoring to interest architects, "S.-B. S. Extra No. 1, Warranted Unfading Black," is absolutely permanent in color and free from ribbons. Neither in appearance nor in durability has it any superior, and it meets every test of the most exacting.

SLATE ROOFING—There is no material for roofing purposes superior to slate. A roof of this material is durable, clean, and of good appearance. It is not only better from a sanitary standpoint, more desirable and economical from a structural and artistic point of view, but it is also cheaper than the average good roof made from other materials.

ADVANTAGES IN DETAIL—Slate roofs are waterproof, require no painting, are superior to shingles in every way, increase the market value of buildings, and decrease the rate of fire insurance from being fireproof and lasting. Slate does not warp, is not affected by salt air, makes a clean roof, so that water collected from a slate roof can be utilized for household purposes.

A building strong enough for shingles, tin or iron roofing is strong enough for slate.

Rafters two by six inches, eighteen feet long, two feet apart, are strong enough to carry a slate roof. The pitch of a roof, for slate, should not be less than one-fifth of the span.

"S.-B. S." EXTRA UNFADING BLACK SLATES—Produced only by the Slatington-Bangor Slate Syndicate. The pure quality of roofing slate is made from quarries containing big beds without ribbon, all the material the same, of strictly uniform color, and unfading.

Such is our "S.-B. S. Extra Unfading Black," to which we call the special attention of architects and builders. These slates possess

the qualities of strength, durability and permanence of color, rendering a roof handsome and practically indestructible. They are made from the largest beds of slate worked in this country and are superior to slate that comes from many small beds separated by ribbons, as no small-bed slate is known to hold its color. Specially adapted for residences, schools, churches and public buildings where the roof is a prominent feature.



SIZES AND WEIGHTS—Our "S.-B. S." Roofing Slate is split to a thickness of about five to the inch, and is cut into sizes as per accompanying table. This table also shows how much should be exposed to the weather on the roof, allowing three inches to lap (the rule in lathing), the number of pieces in each square, and the quantity of nails required to lay.

A "square" of slate, the standard of measurement, is a sufficient number of any size of slate to lay 100 square feet of roof, allowing for the standard three-inch lap. A square of "S.-B. S." Roofing Slate, when laid on the roof with standard three-inch lap, will not exceed 650 lbs. in weight. A carload may be any quantity from 65 to 90 squares.

When specifying for roofs of casting houses, mills, foundries, factories, machine shops, warehouses, barns, stables, etc. we recommend what is known as wide sizes—14 and 12 inches wide by 24, 22, 20, 18, and 16 inches long.

When specifying for public buildings, churches, schoolhouses and residences we recommend the narrow width—10, 9, 8, 7 and 6 inches wide by 20, 18, 16, 14, and 12 inches long.

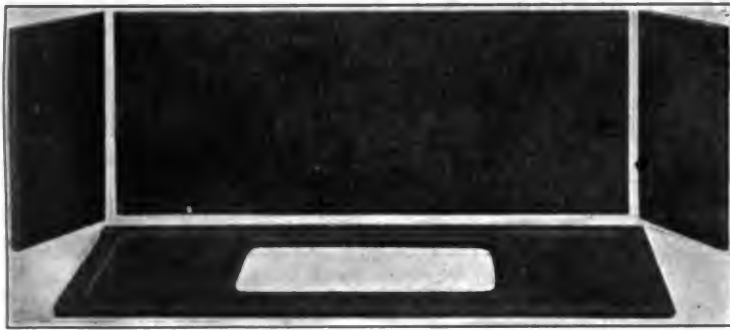
S.-B. S. EXTRA UNFADING BLACK SLATE
 U. S. Trade Mark Registered
 Our Exclusive Brand. Color Guaranteed

Sizes	Price per Square F.O.B. Quarries
24 x 14, 24 x 12.....	\$4.25
22 x 12.....	4.50
22 x 11.....	4.50
20 x 12.....	4.50
18 x 9, 16 x 9, 16 x 8.....	5.00
20 x 10, 18 x 10, 16 x 10.....	4.75
14 x 10.....	4.50
14 x 8, 14 x 7.....	4.25
12 x 8.....	4.00
12 x 6, 12 x 7.....	3.75
Drilling and Countersinking.....	40 cents per Square Extra
Punching.....	10 " " " "
Punching and Cutting.....	15 " " " "

GUARANTEE—Our guarantee is furnished with each shipment as a protection to architects and purchasers against substitution.

Please note that we do not send "certificates" as to the Name only, but give something of material value, a GUARANTEE AS TO QUALITY AND UNFADING COLOR.

Continued on next page



SINK TOP

Top, 1 1/4-inch thick. Back and ends 3/4-inch. Opening for sink cut to any size. All Tops are countersunk unless otherwise ordered. All Sink Tops, Backs and Ends free of Ribbons.

TABLE

Size of Slate, Inches	Number in Each Square	Exposed When Laid and Distance of Lath, Inches	Nails to Square, 3d Galva- P... .. unces
24 x 14	98	10 1/2	1
24 x 12	115	10 1/2	1
22 x 12	127	9 1/2	1
22 x 11	138	9 1/2	1
20 x 12	142	8 1/2	1
20 x 10	170	8 1/2	1
18 x 12	160	7 1/2	1
18 x 10	192	7 1/2	1
18 x 9	214	7 1/2	2
16 x 12	185	6 1/2	1
16 x 10	222	6 1/2	2
16 x 9	247	6 1/2	2
16 x 8	277	6 1/2	2
14 x 10	262	5 1/2	2
14 x 8	328	5 1/2	3
14 x 7	374	5 1/2	3
12 x 8	400	4 1/2	3
12 x 7	457	4 1/2	4
12 x 6	534	4 1/2	5



APPLICATION OF S.-B. S. ROOFING SLATE

ROOFING SPECIFICATION—Architects who desire to secure the best—guaranteed Roofing Slate—should use this Specification form and notify the Company of the Details and Names of Contractors.

SLATING—All roofs, also sides of dormers, are to be covered with "S. B. S." Extra No. 1 Unfading Black Slates, Size or, manufactured by the Slatington-Bangor Slate Syndicate, of Slatington, Pa., and guaranteed by them to be unfading in color. Slate to be properly punched, and nailed with two galvanized wire slate nails to each slate, with a lap of 3 inches of third over first row; eaves, hip and ridges to be doubled. Slates at hips and ridges and all places requiring protection to be bedded in slater's cement; all to be left perfect and warranted snowtight and watertight for five years.

SLATE FOR STRUCTURAL, ELECTRICAL AND OTHER PURPOSES—The attention of architects and builders is invited to this branch of our business. We furnish stair treads, risers and plat-forms; slate for switchboards and panel boards, etc., and blackboards.

With unequalled facilities for filling orders at short notice and able to ship promptly at lowest rates of freight, together with many years of practical experience in the slate business, we are in a position to give purchasers the greatest possible advantages.

"A.B.C." SYSTEMS

SLATE BLACKBOARDS—Our "Premium" Slate Blackboards are of the highest quality, of uniform dead black color and of fine grain and polish.



Time has demonstrated that natural slate is cheaper in the end than usual type of blackboard. It is indestructible and will never wear out.

The leading colleges and schools in the United States are now using our Premium Slate Blackboards.

The Excelsior Slate Co.

Manufacturers of
Marbleized Slate Goods
Blackboards, Structural and Roofing Slate
PEN ARGYL, PA.

T. Masters, Jr.
 Proprietor

PRODUCTS—Structural Slate: URINAL, WATER CLOSET AND SHOWER BATH STALLS AND OTHER PLUMBER'S WORK; FLOOR SLABS AND PATTERN TILE; STAIRS, PLATFORMS AND TREADS; BLACKBOARDS; MAUSOLEUM WORK; MARBLEIZED MANTELS; MARBLEIZED WAINSCOTING, in tiled and plain Effects.

Roofing Slate: MASTERS' EXCELSIOR ROOFING SLATE, in regular sizes.

MASTERS' EXCELSIOR SLATE URINAL STALLS—

As shown; are made of the famous Genuine Masters' Excelsior Slate, which has no superior both in strength and durability. This slate is known for its unfading black color, non-combustibility and non-absorbent qualities. Slate of this grade is clean and self-cleaning and, therefore, the best material for this and similar plumbing purposes—the most sanitary that can be procured.

In Schools, Public Buildings and Institutions of every kind, where a great number of shower bath, urinal and closet stalls are required, Masters' Excelsior Slate will be found the most suitable material both for quality and price. We are prepared to furnish large orders of such work at short notice.

MASTERS' EXCELSIOR SLATE BLACKBOARDS—As shown; are carried in standard stock sizes, 3 ft., 3 ft. 6 in. and 4 ft. high, cut to fit measurements in length. The uniform permanent black color, cleanliness, durability and smooth writing surface makes them much superior to wooden or composition blackboards.

Schools and Colleges all over the United States are using this slate exclusively for blackboards. Our standard stock sizes being always on hand enables us to fill all orders promptly.



MASTERS' EXCELSIOR SLATE URINAL STALL

EXCELSIOR MARBLEIZED SLATE MANTELS—We make these mantels in various stock sizes and designs, and in color effects to imitate every variety of marble, or any wood finish desired. They are rubbed and polished to a highly-finished surface.



MASTERS' EXCELSIOR MARBLEIZED SLATE MANTEL

MARBLE COLORS—We give herewith a list of the various marbles imitated:

SPANISH—Is a chocolate or brown ground, with white veins.
 EGYPTIAN—Black ground, with yellow and white veins.
 VERD ANTIQUE—Green ground, with veins of red and white.
 VENETIAN—Black ground, with veins of white and red.
 PLYMOUTH ROCK OR BLACK—Black ground, with white veins.
 CORSICAN GREEN—Dark green, with white veins.
 PRINCESS ROCK—Dark lavender ground, interspersed with black, with red and white veins.
 BRECCIA—A combination of gray, orange and crimson, with beautiful irregular veins.
 ST. ANNE'S—Dove colored ground, clouded with black and white veins.
 MADRE-POUR—Black ground, irregularly clouded with gray and white.
 RED PORPHYRY—Red ground with black and white spots.
 GRAY PORPHYRY—Black ground, with red and white spots.
 TENNESSEE—Chocolate ground, with brown and white spots.
 FORMOSA, RED GRANITE, GRAY GRANITE, BLACK AND GOLD, LIGHT TENNESSEE, SICILIAN.

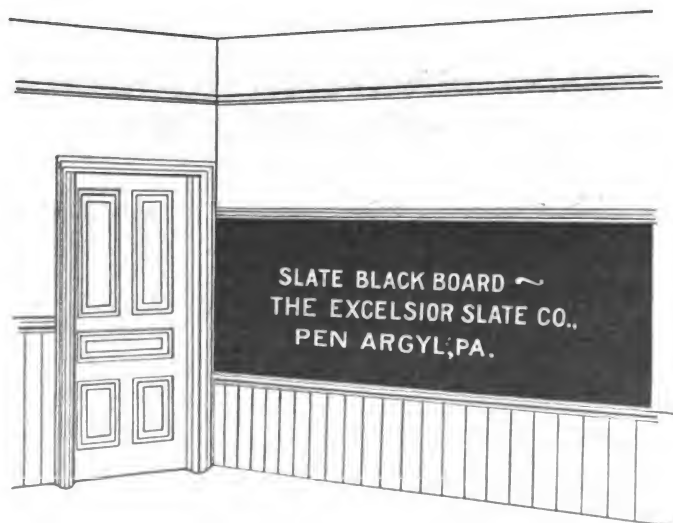
MASTERS' EXCELSIOR MARBLEIZED SLATE WAINSCOTING —

Manufactured like marbleized mantels but produced in large slabs for wainscoting purposes, facings, linings, etc. Can also be made in imitation tile effects, cut into the solid slabs. Bases and caps, plain or molded edges, are furnished with the slabs in appropriate color contrasts. The separate slabs and strips are fastened to the wall like marble with screws or plaster.

PRICES AND SAMPLES—Furnished on application.



MASTERS' MARBLEIZED WAINSCOTING



MASTERS' EXCELSIOR SLATE BLACKBOARD

"A.E.C." SYSTEMS

CLASSIFICATION PAGE OF
SECTION 28

**Steam Power-Plant Machinery and Specialties, for General Purposes
and High-Pressure Heating. Hydraulic and
Pneumatic Engines and Fittings**

Section Synopsis

A. HIGH-PRESSURE STEAM BOILERS, horizontal-tubular, vertical-tubular and water-tube Types; Fire-Box Boilers; Coal, Artificial Gas, Natural Gas and Petroleum Firing Furnaces; Feed-Water Heaters; Boiler Pumps, Pump Governors, Water Softeners and Scale Removers and General Power-Plant Equipment

Special Boiler Grates; Grate Blowers; Mechanical Stokers; Forced-draft and Superheated-steam Devices; Automatic Smokeless Furnaces; Boiler Breeching; Smoke Stacks, etc.

B. STEAM ENGINES AND PUMPS, of all kinds and for all purposes; Sewage Pumps; Steam Turbine; Steam Drills and Similar Tools; Traveling and Stationary Cranes; Condensers, Compressors; Iron Tanks, for storage, suction, air and water compression, blow-off, etc.; Gears, Shafting and Hangers, Pulleys, Corundum Wheels; Rope Transmission; Pressure Hose; Transmission Rope; Engine Belting

C. Valves, Steam Traps, Steam and Oil Separators; Oil Filters; Automatic Oilers; Injectors; Measuring and Regulating

Instruments; Duplex Regulators; Exhaust Heads; Patent Steam Specialties; Pipe and Piping Details; Pipe Bending, Welded Outlets and Joints; Packing

D. PIPE AND BOILER COVERING (Heat Insulating). Magnesia-Asbestos and other Composition Cement Plastic Coverings; Wood, Magnesia-Asbestos and other Sectional Coverings of all kinds, for steam pipes, boilers, hot water pipes and tanks, etc.

(Cold Insulating). Plastic and Sectional Coverings of Asbestos Composition, Cork, etc., for Refrigeration work, Ammonia Pipes, Brine Tanks, Cold Water Supply Pipes and Tanks, etc.

E. HYDRAULIC ENGINES. Apparatus and Fittings; Hydraulic Engineering; Water Motors and Wheels; Turbines; Hydraulic Rams, etc.

F. PNEUMATIC ENGINES. Apparatus and Fittings; Pneumatic Engineering; Compressed Air Motors; Air Pumps; Air Compressors; Sand-Blast Tools; Sewage Ejectors; Pneumatic Hoists, Cranes, Drills, Riveters, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX			
REGULAR CLASSIFICATION			
A	1	Automatic smokeless furnaces	
	2	Boiler breeching, smoke stacks, etc.	
	3	Boiler-feed pumps and governors	
	4	Boiler-feed regulators	
	5	Engine-valve movements, <i>special</i>	
	6	Feed-water heaters, <i>open type</i>	
	7	Feed-water heaters, <i>closed type</i>	
	8	Forced-draft equipment, <i>steam and hot air blowers</i>	
	9	General power-plant installation	
		High-pressure steam boilers:—	
	10	Fire-box or locomotive type	
	11	Horizontal tubular	
	12	Internally-fired	
	13	Vertical tubular	
	14	Water-tube type	
	15	High and low-water alarms	
	16	Marine stokers	
	17	Mechanical stokers	
	18	Natural gas-firing furnaces, <i>for h.p. boilers</i>	
	19	Petroleum-firing furnaces, <i>for h.p. boilers</i>	
	20	Special boiler grates	
	21	Special furnaces	
	22	Superheated-steam devices	
23	Water softeners and scale removers		
B	35	Barometric condensers	
	36	Condensers, compressors, <i>steam, water, gas</i>	
	37	Condensing engines	
	38	Corundum and emery wheels	
	C	39	Economizers, <i>steam consumption</i>
			Engine belting:—
		40	Composition
41		Leather	
42		Raw hide	
43		Rubber	
44		Woven, <i>textile</i>	
45	Iron tanks, <i>storage, suction, blow-off, compression, etc.</i>		
46	Power forges		
47	Pressure hose		
48	Rope transmission		
49	Shafting, hangers, belt pulleys, rope pulleys, gear, etc.		
50	Steam condensers and compressors		
51	Steam drills and similar tools		
52	Steam engines, <i>general power, all designs, vertical, horizontal</i>		
53	Steam engines, <i>special for electric generators, belt, direct</i>		
54	Steam traveling and stationary cranes		
	Steam pumps:—		
55	Bilge, sewage		
56	Centrifugal		
57	Duplex, triplex, piston		
58	Elevator service		
59	Foundation work		
60	General work		
61	Rotary		
62	Turbine		
63	Steam turbines, <i>power</i>		
64	Transmission rope		
D	75	Automatic oilers, <i>lubricators</i>	
	76	Duplex regulators	
	77	Exhaust heads	
	78	Injectors, <i>boiler</i>	
79	Measuring and regulating instruments		
	80	Oil filters	
	81	Pipe, <i>welded, for power and heating</i>	
	82	Pipe bending, welded outlets, joints	
83	Pipe-fitting details, cast-iron, malleable, brass, unions, elbows, couplings, etc.		
84	Steam and oil separators		
85	Steam traps		
86	Steam packing, <i>all kinds</i>		
87	Sundry steam specialties		
	Valves, brass and iron:—		
88	Foot valves, <i>pumps</i>		
89	Geared, hydraulically-operated, electrically-operated		
90	Globe, gate, check, indicating, control-check, throttle, hose		
91	Pressure-reducing, <i>steam</i>		
92	Safety, <i>blow-off</i>		
93	Steel gate or globe		
94	Superheated steam, for		
105	Pipe and boiler covering, <i>heat-insulating</i> :—		
	Magnesia-asbestos and similar plastic cement covering		
	106	Magnesia-asbestos insulating cements	
	107	Sectional coverings of magnesia-asbestos, and similar materials, blocks for boilers and tanks, etc.	
108	Wood sectional pipe covering, <i>underground</i>		
109	Underground sectional conduit		

110	Pipe and tank covering, cold insulating:—
111	Asbestos composition, plastic and sectional covering
	Cork composition, sectional and sheet covering, board, blocks, etc.
E	Hydraulic engines:—
120	Compressors
121	Jacks, shoring
122	Rams, water lifts
123	Turbines
124	Water jets, foundation work
125	Water motors
126	Water wheels, power

F	Pneumatic engines:—
135	Air compressors, steam, electric
136	Air pumps, caisson foundations
137	Compressed-air motors
138	Hoist, cranes, drills, etc.
139	Sandblast tools
140	Sewage ejector, pneumatic

SPECIAL CLASSIFICATION

Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.

161	Cast-iron drainage fittings (S. 35 D)
162	Damper regulators (S. 29 C)
163	Hand pumps, various styles (S. 35 F)
164	Heavy iron and brass castings (S. 15 A)
165	Insulation for structural work:— Asbestos felt, paper, board, etc. (S. 26 D)
166	Corkboard, and blocks (S. 26 D)
167	Plumbers' iron and brass cocks and valves (S. 35 A)
168	Pressure-reducing valves, water (S. 35 A)
169	Radiator valves (S. 29 C)

TRADE NAMES AND BRANDS

"Acme," steam-pipe sleeve, special, S. 29 C	Catalog 4
"Ajax," Corliss engine	
"Franklin," Corliss engine	
"Naylor Vortex," steam separators	Catalog B 1
"Venturi," air pumps and condensers	
"Copes-Neco," boiler-feed regulators and pump governors	Catalog A 3
"Neco," water alarms and control check valves	
"Crowe," automatic chain grate stokers	Catalog A 1
"Dehn's," automatic water softener	S. 35 D, Catalog 1
"Peerless," water softener	
"Doane," steam exhaust heads, S. 17 A	Catalog 3
"Economy," automatic steam bilge pumps	S. 35 F, Catalog 3
"J-M Asbestos Sponge," etc. steam pipe covering	
"J-M Asbestoel," etc. steam pipe covering	Catalog D 2
"J-M Anti-sweat," etc. cold-water pipe covering	
"J-M," asbestos cement No. 302 pipe covering	
"K & J," steam and water valves and fittings, and cast-iron drainage fittings	Catalog C 2
"Keeler," water-tube and return-line boilers	Catalog A 4
"McClave," grates, stokers and steam blowers, Catalog A 5	

"Monash," pressure regulating valves, and pump governors, S. 29 C, Catalog 1
 "Nelson," full line of valves for steam and water, Catalog C 1
 "Nonpareil," high-pressure steam covering, and cork covering and corkboard for cold insulation, refrigeration, etc., Catalog D 1
 "Star," safety water-tube boiler, Catalog A 6
 "Weller-Made," machinery for power-transmission purposes, S. 33 C, Catalog 1

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 40	41 to 80	81 to 120	121 to 160	161 to 200
D 1	Armstrong Cork Co. Pittsburgh, Pa.			105 107 111		166
A 6	Harrisburg Star Boiler Co. New York, N. Y.	14				
B 1	Hewes & Phillips Iron Works Newark, N. J.	9 35 36 37	52 53	84	136	164
A 1	Ironworks Co., The Jersey City, N. J.	1 9 16 17	46 52			
D 2	Johns - Manville Co., H. W. New York, N. Y.			105 106 107 109 110		165
A 4	Keeler Co., E. Williamsport, Pa.	2 11 12 14	45			
C 2	Kelly & Jones Co. Greensburg, Pa.	9	75	81 83 87 88 89 90 91 92 94		161 162 164 167 169
A 5	McClave-Brooks Co. Scranton, Pa.	8 17 20 21				164
A 2	National Pipe Bending Co. New Haven, Conn.	6		84		
C 1	Nelson Valve Co. New York, N. Y.			89 90 91 92 93 94		
A 3	Northern Equipment Co. Chicago, Ill.	3 4 15		90		

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.

Blaisdell Machinery Co., The S. 38, Cat. 4 (Pneumatic sewage ejectors, air compressors)	
Burt Manufacturing Co., The S. 16 C, Cat. 2 (Oil filters, exhaust heads)	
Columbian Rope Co. S. 3, Cat. 1 (Transmission rope)	
Compound Injector & Specialty Co. S. 35 D, Cat. 1 (Boiler injectors and water softeners)	
Des Moines Bridge & Iron Co. S. 35 F, Cat. 4 (Iron and steel tanks)	
Douglas, W. & B. S. 35 F, Cat. 2 (Steam pumps, all kinds)	
Johnson, W. H. & Son S. 29 C, Cat. 4 (Special steam-pipe sleeve)	
Kellogg Co., The M. W. S. 8 A, Cat. 5 (Pipe bending and welding)	
Michigan Engine Valve Co. S. 19 A, Cat. 4 (Engine valves)	
Milwaukee Concrete Mixer and Machinery Co. S. 3, Cat. 2 (Steam engines and hoists)	
Monash-Younger Co. S. 29 C, Cat. 1 (Pressure - regulating valves)	
Thomas & Smith Inc. S. 35 F, Cat. 3 (Steam bilge pumps)	
Variety Manufacturing Co. S. 17 A, Cat. 3 (Steam exhaust heads)	
Weber Subterranean Pump Co. S. 35 F, Cat. 1 (Air compressors)	
Weller Mfg. Co. S. 33 C, Cat. 1 (Gears, pulleys, shafting, belting, etc. for power transmission)	

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Abendroth & Root Mfg. Co... Newburgh, N. Y.	2 14 20		83		163	Bashlin Co..... Warren, Pa.		50	90			Canton-Hughes Pump Co... Canton, Ohio		55 56 57 58 59 60 61			
Abendroth & Stein Co., Inc... New York, N. Y.	13	77	83 87			Basshor Co., Thomas C..... Baltimore, Md.	2 9 11 13	45	83								
Advance Pump & Compress- sor Co. Battle Creek, Mich.		60				Bath Iron Works, Ltd..... Bath, Me.	10 11 13 14	45				Cardwell Machine Co..... Richmond, Va.		57 58			
Alberger Condenser Co..... New York, N. Y.		52 53				Benton Valve Co..... New York, N. Y.			90			Challenge Co..... Batavia, Ill.					163
Allen Sows Co., William..... Worcester, Mass.	2 10 11 13 14					Best Mfg. Co..... Pittsburgh, Pa.		77	90 92			Chandler & Taylor Co..... Indianapolis, Ind.	9	52 53			
Allentown Boiler Works..... Allentown, Pa.	2 3 9 10 11 13 20	45 78	84 90			Beyers Machine Co., John F. Ravenna, Ohio	13	54				Chuse Engine & Mfg. Co..... Mattoon, Ill.	9	52 53			
Allis-Chalmers Co..... Milwaukee, Wis.		52 53				Bigelow Co..... New Haven, Conn.	2 10 11 13 14	45				Chapman Valve Mfg. Co..... Indian Orchard, Mass.			88 89 90 91 92 93 94		
Almy Water-Tube Boiler Co. Providence, R. I.	14					Birch, Riley & Co..... New York, N. Y.	17					Chicago Pneumatic Tool Co.. Chicago, Ill.		51		135 138 139	
American Blower Co..... Detroit, Mich.	8	53 63 77	85			Blake Mfg. Co., Geo. F..... New York, N. Y.		55 56 57 58 59 60 61 62				Clark Bros. Co..... Belmont, Md.		52 53			
American District Steam Co.. Lockport, N. Y.			108			Bonar & Co., James..... Pittsburgh, Pa.	6 7					Clayton Air Compressor Works New York, N. Y.	36			135	
American Engine Co..... Bound Brook, N. J.		52 53				Boyts, Porter & Co..... Connellsville, Pa.	3	59 60				Clow & Sons, James B. Chicago, Ill.			90		
American Steam Pump Co... Battle Creek, Mich.		55 56 57 58 59 60				Bradford Belting Co..... Cincinnati, Ohio		41				Codd Co., E. J. Baltimore, Md.	2 11 13 14 20	45 52			
American Steam Gauge & Valve Mfg. Co. Boston, Mass.		79	87			Bremen Mfg. Co..... Bremen, Ohio				136		Collins Iron Works Long Island City, N. Y.	2	45			
Ames Iron Works..... Oswego, N. Y.		52 53				Brown Co., A. & F..... New York, N. Y.		52 53	83 87 90			Columbiana Boiler Co..... Columbiana, Ohio	10 11 13 14				
American Stoker Co..... New York, N. Y.	16 17 20					Brownell Co..... Dayton, Ohio	6 7 11 13	52 53				Commercial Boiler Works Seattle, Wash.	2 10 11 13 14	45			
Ashcroft Mfg. Co..... New York, N. Y.			90 92			Brown Engine Co., Inc..... Fitchburg, Mass.		52 53				Connersville Blower Co..... Connersville, Ind.	8	61			
Ashton Valve Co..... Boston, Mass.		79	87			Buckeye Engine Co..... Salem, Ohio		52				Cooper Co., C. & G. Mount Vernon, Ohio		52 53			
Atlas Engine Works..... Indianapolis, Ind.		52 53				Buffalo Forge Co..... Buffalo, N. Y.		52 53				Corry Steam Boiler Works.. Corry, Pa.	2 6 10 11 13	45			
Automatic Machine Co..... Bridgeport, Conn.		52 53 54				Buffalo Steam Pump Co.. Buffalo, N. Y.		56 60				Cotton A. B. Iron..... Newark, N. J.		41 42			
Babcock & Wilcox Co..... New York, N. Y.	11					Burnett, J. F..... Peabody, Mass.	2 10	45				Cotton A. B. Iron..... Newark, N. J.			90 91 92 93 94		
Ball & Wood Co..... Elizabethport, N. J.		52 53				Cameron Steam Pump Works, A. S. New York, N. Y.		56 57 58 59 60 61 62				Cotton A. B. Iron..... Newark, N. J.			90 91 92 93 94		
Ball Engine Co..... Frank, Pa.		52 53				Carroll, J. F..... Carroll, Ohio						Cotton A. B. Iron..... Newark, N. J.			90 91 92 93 94		

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Crowell, J. G..... Brooklyn, N. Y.		61	120			Fairbanks Co..... New York, N. Y.		40 41 42 43 44 46 48 49	87 90			Griscom Spencer Co..... New York, N. Y.	6 7 36	50	84		
Curtis Mfg. Co..... St. Louis, Mo.		54	120	135 138 139		Fairbanks, Morse & Co..... Chicago, Ill.	3	55 56 57 58 59 60 61				Grupe Drier & Boiler Co.... Davenport, Iowa	2 6 7 9 10 11 13	45			
Dallas Boiler Works..... Dallas, Texas	2 11	45				Fargo Foundry Co..... Fargo, N. D.	2	45 49				Hardie-Tynes Mfg. Co..... Birmingham, Ala.	9	50 52 53 54	84	135	
Dart Mfg. Co., E. M..... Providence, R. I.				138		Federal Metallic Packing Co. Boston, Mass.			86 87			Harrisburg Mfg. and Boiler Co. Harrisburg, Pa.	2 10 11 13 14 20	45			
Davis Regulator Co., G. M... Chicago, Ill.		79	90			Fitchburg Steam Engine Co. Fitchburg, Mass.		52 53				Harrison Safety Boiler Works Philadelphia, Pa.	6 7 23		84		
Dean Bros. Steam Pump Works Indianapolis, Ind.		56 57 58 59 60 61 63				Fitzgibbons Boiler Co..... New York, N. Y.	10					Harris Steam Engine Co., William A. Providence, R. I.		52 53			
Deane Steam Pump Co..... Holyoke, Mass.	3	55 56 57 58 59 60 61 62				Fitzgibbons Boiler Co., P. H. Ogdensburg, N. Y.	2 10 11 13	45				Heggie, James G..... Joliet, Ill.	2 10 11 13	45			
DeLaval Steam Turbine Co. Trenton, N. J.		63				Ford Co., Thomas P..... New York, N. Y.		79	85 90			Heine Safety Boiler Co..... St. Louis, Mo.	2 14 22				
D'Ester Co., Julian..... Boston, Mass.		79	84 85			Foster Engineering Co..... Newark, N. J.			87 91			Hendy Iron Works, Joshua... San Francisco, Cal.	3 6 7 9 10 11 13 19	48 49 52 53 54 56 57 59 60	78	123 125 126 135	
Diamond Boiler Works..... Minneapolis, Minn.	2 7 9 10 11 13 20	45				Franklin Boiler Works Co... New York, N. Y.	14					Hill Machine Co..... Anderson, Ill.		56 59 60			163
Dodge Mfg. Co..... Mishawaka, Ind.		48 49				Franklin Mfg. Co..... Franklin, Pa.			105 107			Hodge Boiler Works..... East Boston, Mass.	2 10 11 13 20	45	84		
Dornfeld-Kunert Co..... Watertown, Wis.	2 3 9 11 13 20	45 56 60 78	86 90 105 107 110			Freeman & Sons Mfg. Co., S. Racine, Wis.	2 9 10 11 13 14 20	45				Holland Machine Co..... New York, N. Y.		56 57 58 59 60 61			
Dover Boiler Works..... Dover, N. J.	2 10 11 13	45				Frost, C. S. & Chas. H..... Watkins, N. Y.	10					Holly Mfg. Co..... Buffalo, N. Y.	3	50 57			
DuBois Iron Works..... Du Bois, Pa.	3	56 61				Garden City Fan Co..... Chicago, Ill.	8	46				Holmes Iron Co., Inc..... Rutland, Vt.	2 10 11 13 20	45 78			
Ehram & Sons Mfg. Co., J. B. Enterprise, Kans.	14 20	48 49				Geiser Mfg. Co..... Waynesboro, Pa.		52				Howell & Co., R. R..... Minneapolis, Minn.	2 3 20	48 49 52 56			
Epping-Carpenter Co..... Pittsburgh, Pa.	3	56 60				Gem City Boiler Co..... Dayton, Ohio	6 7 10 20 23	45				Hunt Co., C. W..... West New Brighton, N. Y.	9	54	90		
Erie City Iron Works..... Erie, Pa.	11 13 14	52 53				Gogebic Steam Boiler Works Duluth, Minn.	2 10 11 13 20	45				Ide & Sons, A. L..... Springfield, Ill.		52 53			
Erie Engine Works..... Erie, Pa.	7 10 11 13 14 20	52 53				Goulds Mfg. Co..... Seneca Falls, N. Y.		55 56 57 58 59 60 61 62									
Erie Mfg. & Supply Co..... Erie, Pa.	6 7	52 53				Goyne Steam Pump Co., Inc. Ashland, Pa.	3	57									
Erie Pump & Engine Works. Erie, Pa.		53 56 59 60				Graton & Knight Mfg. Co ... Worcester, Mass.	40	41 42	86								
						Graves & Marshall..... Dayton, Ohio	2 6										
						Griffith & Wedge Co..... Zanesville, Ohio	2 9 11	52									

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Ingersoll-Rand Co..... New York, N. Y.			120			McEwen Bros..... Wellsville, N. Y.	2 8 11 20	56				Murray & Tregurtha Co.... South Boston, Mass.	14	52			
International Boiler Works Co. East Stroudsburg, Pa.	2 9 10 11 13 20	45				McGowan Co., John H..... Cincinnati, Ohio		56 57 58 59 60 61 62 63				Murray Iron Works Co..... Burlington, Iowa	2 6 7 9 10 11 13 14 20	49 52 53			
Jenkins Brothers..... New York, N. Y.			86 87 90		169	Main Street Iron Works..... San Francisco, Cal.	2 3 6 7 9 10 11 13 14 19	48 49 50 52 53 56	90	123 135		Nagle Engine & Boiler Works Eric, Pa.	10 11 12 13 14	52 53			
Keasbey & Mattison Co..... Ambler, Pa.			105 106 107			McGraw, Jr., T. H..... Pittsburgh, Pa.	2 3 6 7 8 9	45 52 53 56 57 59				Nason Mfg. Co..... New York, N. Y.			85 87		
Keasbey Co., Robert A..... New York, N. Y.			105 106 107									National Blower Works..... Milwaukee, Wis.	8	52	85		
Kennedy Valve Mfg. Co..... Elmira, N. Y.			90 91 92		169							National Supply Co..... Toledo, Ohio	2				
Kenny Boiler & Mfg. Co..... St. Paul, Minn.	2 10 11 13 20	45										National Tube Co..... Pittsburgh, Pa.			87 90		
Ketcham Iron Co..... Ft. Smith, Ark.	20	49	83			McIntosh, Seymour & Co..... Auburn, N. Y.		52 53				Neemes Brothers..... Troy, N. Y.			87		
Kewanee Boiler Co..... Kewanee, Ill.	10 11 13 14	45				McNeil Boiler Works..... Akron, Ohio	2 11 14	45				Newbold & Son Co..... Norristown, Pa.	2 11 20	45			
Kieley-Mueller..... New York, N. Y.	6 7		84 85 90 91			Manning, Maxwell & Moore.. New York, N. Y.			90	169		New York Asbestos Mfg. Co.. New York, N. Y.			105		165
LaCrosse Boiler Co..... LaCrosse, Wis.	2 10 11 13 14	45				Mead-Morrison Mfg. Co..... Boston, Mass.		54				Norristown Magnesia & As- bestos Co..... Norristown, Pa.			105 108	165	
Lane & Bodley Co..... Cincinnati, Ohio	17 20	49 52 53		120 135		Meehan Boiler & Construc- tion Co. Lowellville, Ohio	2	45				Ohio Blower Co..... Cleveland, Ohio		77	84		
Leitelt Iron Works, Adolph.. Grand Rapids, Mich.	2	58 60	83 90			Milwaukee Boiler Co..... Milwaukee, Wis.	2 6 10 11 13	45				Ohio Brass Co..... Mansfield, Ohio			90 91		169
Liddell Co..... Charlotte, N. C.	2	52 53				Minneapolis Steel & Machin- ery Co. Minneapolis, Minn.	2 3 7 9 14 20 23	45 48 49 53 54				Oil City Asbestos Co. Reno, Pa.			105 106 107 110		165
Lindstrom's Machine Works. Allentown, Pa.			84 85									Olney & Warren..... New York, N. Y.	6 7 9 11 13 20	41 45 49 52 53 57	84 85 86 87 90 120	121 135 138	
Linton Machine Co..... New York, N. Y.	6		85			Mohr & Sons, John..... Chicago, Ill.	2 10 11 13 14	45				Parker Boiler Co..... Philadelphia, Pa.	14 22				
Litchfield Foundry & Ma- chine Co. Litchfield, Ill.		52 53				Monarch Valve and Mfg. Co.. Springfield, Mass.			90			Parson Mfg. Co..... New York, N. Y.	9 17 20				
Littleford Bros..... Cincinnati, Ohio	2	45				Morris Co., I. P..... Philadelphia, Pa.	9	45 56 60		121 120		Peter & Co., Frank L... New York, N. Y.	6 7		83 84		
Lookout Boiler & Mfg. Co.... Chattanooga, Tenn.	2 7 10 11 13	45				Morris Machine Works..... Baldwinsville, N. Y.		52				Reichart & Co., Frank L... Detroit, Mich.		75 78 80			
Ludlow Valve Co..... Troy, N. Y.			90 91 92 93		169	Mundy, J. L..... Newark, N. J.									83 87 90		
Lunkenheimer Co..... Cincinnati, Ohio		75 78 79	84 87 88 90 91 92 93 94			Murphy Iron Works..... New York, N. Y.											

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 40	41 to 80	81 to 120	121 to 160	161 to 200		1 to 40	41 to 80	81 to 120	121 to 160	161 to 200		1 to 40	41 to 80	81 to 120	121 to 160
Pennsylvania Boiler Works. Erie, Pa.	2 10 11 13					Sinker-Davis Co..... Indianapolis, Ind.		52 53				United Cork Companies..... Lyndhurst, N. J.			111	
Perfection Grate Co..... Springfield, Mass.	20					Smith & Son Co., Samuel.... Paterson, N. J.	2 10 11 13	45								
Perkins Co., John B..... Boston, Mass.			90			Smith Co., S. Morgan..... York, Pa.		63				Valley Iron Works..... Williamsport, Pa.	20	49 52 53		
Phoenix Iron Works..... Meadville, Pa.	10 11 13 14	52				Snow Steam Pump Works... New York, N. Y.	3	50 56 57 58 59 60 61				Vanduzen Co., E. W..... Cincinnati, Ohio		75 79		
Pickering Governor Co..... Portland, Conn.		63	79			Southern Engine & Boiler Works. Jackson, Tenn.	2 3 6 7 9 10 11 13 20 23	45 49 52 53 78	90			Wagener Steam Pump Co.... Canton, Ohio		57 60		
Pittsburgh Gauge & Supply Co..... Pittsburgh, Pa.		79	83 84 90			Standard Boiler Works..... Lebanon, Pa.	2 10 11 13	45				Wallace Concrete Machinery Co. Los Angeles, Cal.				138
Platt Iron Works Co..... Dayton, Ohio	6 7	62				Standard Steam Specialty Co. New York, N. Y.	3 6 7	79	83 84 85 90			Walsh's Holyoke Steam Boil- er Works Holyoke, Mass.	2 11			
Poole Engineering & Ma- chine Co. Baltimore, Md.		49 57		123 126		Steam Appliance Co..... Milwaukee, Wis.			84 90			Walworth Mfg. Co..... Boston, Mass.		60 75 78	84 90 91	
Portland Co..... Portland, Me.			89			Stearns-Roger Mfg. Co..... Denver, Col.	2 6 8 9 10 11 13 14 17	45 50 52 53 54 56 59 60				Washington Iron Works..... Seattle, Wash.	2 6 9 11 13 19 20	45 54		
Pratt & Cady..... New York, N. Y.			90 91 92			Struthers-Wells Co..... Warren, Pa.	2	45				Weinman Pump Mfg. Co.... Columbus, Ohio	3	45 56 57 58 59 60 61 63	85 86 120	135
Ridgway-Dynamo & Engine Co. Ridgway, Pa.		52 53				Sturtevant Co., B. F..... Hyde Park, Mass.	8	53 63 77	85			Westinghouse Machine Co. Pittsburgh, Pa.	17	50 52 53 63		
Rodgers Iron Mfg. Co..... Muskegon, Mich.	3	60				Sweigard & Co., Jos. L..... Philadelphia, Pa.			135			Whitlock Coil Pipe Co..... Hartford, Conn.	6	77	81 82 84	
Rohan & Son Boiler Works Co. St. Louis, Mo.	1 2 9 7 10 11 13 14	45				Sydnor Pump & Well Co.... Richmond, Va.		49 56 57 58 59 60 61		122 135 136	163	Wilson Steam Boiler Co.... Omaha, Neb.	2 11	45		
Ross Valve Mfg. Co..... Troy, N. Y.		79	90 120			Terry Steam Turbine Co.... Hartford, Conn.	8	56 60 63				Wing Mfg. Co., L. J..... New York, N. Y.	4 8	61		
Ruemmel-Dawley Mfg. Co. St. Louis, Mo.	2 3 9 7 10 11 13 23	45 50 52 60	84 85 135 138	166		Totte Boiler & Sheet Iron Works Houston, Texas	2	45				Worthington, Henry R..... New York, N. Y.		55 56 57 58 59 60 61 62	87	
Rumsey & Co..... Seneca Falls, N. Y.	3	96 99 91	122	163		Tomahawk Iron Works..... Tomahawk, Wis.	1 4 5 9 10 11 13 20	45				Wyckoff & Son Co., A..... Elmira, N. Y.			108	
Schmahl Co., Jacob..... Buffalo, N. Y.	2	45				Troy Engine & Machine Co. Troy, Pa.		52 53				Yale-Harvard Co..... New York, N. Y.	6 7		87	
Schofield's Sons Co., J. S. Macon, Ga.	2 3 7 9 10 11	45 48 49 50 51 52	90			Trium Mfg. Co..... Cincinnati, Ohio				123 126		Ziemore Regulator Co..... Johnsonburg, Pa.	8	58 79		
Sharkey & Beck..... Chicago, Ill.			87													
Sharp Co., W. M..... Binghamton, N. Y.			87													
Shepard, Chas. G..... Buffalo, N. Y.																

The Ironworks Company

Manufacturers of

Crowe's Mechanical Chain Grate Stokers

NO. 1 MONTGOMERY STREET
JERSEY CITY, N. J., U. S. A.

PRODUCTS—SMOKELESS MECHANICAL STOKERS, GRATE BARS, POWER PLANT MACHINERY, STEAM ENGINES, POWER FORGES, MARINE STOKERS

DETAILED DESCRIPTION—The Crowe Automatic Chain Grate Stokers are operated by a worm and gear which revolve a shaft over which pass endless chains carrying transverse grate bars. These carry fuel from a hopper through the furnace chamber and automatically deposit remaining ash over a bridge upon a dump plate, returning under the fire over rollers which remove slag to repeat work. All of this is set permanently but adjustably. All construction is of structural steel except the bridge, wall and fire-brick arch.

The fire once ignited upon grate surface eats into the continuous stream of fuel. Breaks in the fire bed are prevented by a raised bridge over which ashes pass, making an agitative back-pressure against the burning fuel.

Grate bars are constructed and designed so as to be self-protective against burning out.

Special construction of brick side walls prevents slag accumulations thereon. Permanent setting prevents uncontrolled draft along side walls. Special construction of ash-pit prevents uncontrolled draft in back. Air enters only through fire, preventing chilling of boiler by unheated air. Every part is guarded against extreme heat.

Arches of brick are mounted over front end of stoker, heated to high temperature, the reflection of which drives out all volatile carbon from fuel, which then passes over fire in combustion chamber and is consumed thoroughly, giving additional heat of great gas flames above fire. All remaining combustible is consumed *before reaching rear* of stoker, making a minimum of ash.

"A.B.C." SYSTEMS

ECONOMY—The power used to operate stoker is so small as to be negligible. A small oscillating engine, simple and durable, is furnished with the stoker.

Repairs are easily made, any section injured being readily replaced. When grate bars are found defective from wear, they may be replaced in a few minutes without pulling fire or interfering with it, as they reach to front of stoker.

Cleaning of fires is unnecessary as all ash and slag are automatically deposited on dump plate. From this they are discharged into the ash-pit periodically by hand-operating rod.

Oscillation, agitation and *wavy motion* of fire bed, to prevent clinker and keep draft free, is obtained by irregular motion of grate bars as grate chains pass over carrying-wheels.

CARDINAL POINTS—The Crowe Stokers are noted for the following:

Smokeless under all conditions;

Economical in operation;

Durable and powerful in results and adjustable;

Uniform temperature positively assured.

Stokers are built to meet all conditions, and designed to use bituminous or anthracite coal or mixtures, also for natural or forced draft.

TESTS—We make our test according to standard test rules of American Society of Mechanical Engineers. The stoker tests show that the stack is smokeless, that there is an increase of about 15 per cent. in boiler efficiency and from 50 to 150 per cent. in boiler capacity; that about 25 per cent. more water is evaporated per pound of fuel, and that there is about 10 per cent. less ash, all as compared with hand firing.



ONE FOURTH OF THE COAL SAVED BY USING THESE ENTIRELY SMOKELESS STOKERS

Tests made by the Engineers of the New York Central & H. R. R. R.
100 H. P. Return Tubular Boiler

	Test 1	Test 2
Dates of Tests.....	Dec. 8th, '08	Dec. 9th, '08
Duration of test.....	8 hrs	8 hrs
Kind of Coal.....	(Lincoln)	Semi-Bituminous
Grate surface.....	20 sq. ft.	20 sq. ft.
Induced Draft Pressure.....	1.25	0.30
Temperature of feed water.....	150° F.	182° F.
" " flue gases.....	630° F.	433° F.
Steam Pressure.....	90.9 lbs.	92.4 lbs.
Total Coal consumed as fired.....	8,600 lbs.	3,086 lbs.
Coal consumed per hour.....	1,100 lbs.	386 lbs.
Total Dry Coal consumed.....	8,103 lbs.	2,951 lbs.
Per Cent. of moisture in coal.....	7.92%	4.37%
Total Combustible.....	7,801 lbs.	2,621 lbs.
Total Water fed temp. feed.....	69,374 lbs.	28,560 lbs.
Equiv. Evap. from and at 212° F.....	75,518 lbs.	29,886 lbs.
Equiv. Evap. per hour from and at.....		
212° F.....	9,439 lbs.	3,735 lbs.
Water per pound of dry coal as fired.....	8.44 lbs.	9.46 lbs.
Water per pound of dry coal from.....		
and at 212° F.....	9.31 lbs.	10.13 lbs.
Water per pound Combustible from.....		
and at 212° F.....	9.68 lbs.	11.40 lbs.
Coal burned per square foot of.....		
grate surface per hour.....	55 lbs.	19.2 lbs.
Horse Power developed.....	273 h. p.	108 h. p.
Coal burned per h. p. hour as fired.....	4.02 lbs.	3.56 lbs.
Factor of Evaporation.....	1.103	1.070
Boiler Efficiency.....	64%	76%
Percentage of refuse and ash in dry coal.....	5.01%	12.21%
Condition of Stack.....	SMOKELESS	SMOKELESS
H. P. developed over rating.....	173%	8%

Analysis of Coal.—Volatile, 31.158; Fixed Carb. n., 52.81; Moisture, 7.92; Ash, 6.25; Sulphur, 1.861; B. T. U. 13,094

The National Pipe Bending Co.

Manufacturers of

Feed Water Heaters and Purifiers

NEW HAVEN, CONN.

PRODUCTS—NATIONAL DIRECT-CONTACT OR OPEN FEED-WATER HEATERS

DESCRIPTION—This apparatus is correct and simple in design, thoroughly efficient in operation and, considering the high quality of materials, construction and workmanship, moderate in cost.

In this Heater the method of transmitting the heat of the exhaust steam to the water is a distinctive feature and entirely different from that employed in the usual type open heaters.

The salient points of construction and operation are as follows:

THE OIL SEPARATOR—It is part of the Heater and forms the back head, and is of same diameter as the shell. It is of the gravity type and has a multi-ported baffle plate, each port having an individual baffle. The design and location of these ports, while allowing the steam to pass freely through without friction, **ABSOLUTELY PREVENT ANY OIL BEING CARRIED PAST INTO THE HEATER.** These ports consist of pipes connecting outer wall of separator to the baffle plate.

Each one has an opening on the back side equal to the opening through the baffle plate. This gives a wall of metal opposed to the current of steam, and also causes an additional change of direction in the steam current. The large cubical capacity of the separator insures the **EFFECTIVE SEPARATION OF OIL** from the exhaust steam, overcomes the pulsations of exhaust, and gives an even flow of steam to the Heater.

The Separator is arranged to automatically drain to waste.

METHOD OF HEATING THE FEED WATER—The cold water supply to Heater is automatically regulated to meet the demands of the boiler feed pump, and enters a manifold on its way to the Contact Pipes by which the water is heated both by surface contact with the steam pipe and also by direct contact with the steam. These pipes consist of a double cast-iron pipe cast together, one within the other. (See Cross-Section.)

The inner pipe is the cold-water pipe connected with the manifold, and the outer is the steam pipe connected to the STEAM Outlet from the Oil Separator. The Water Pipe has a port its full length extending upward to outside surface of steam pipe, and

the Steam Pipe also has a port its full length at the bottom, through which all steam enters the heater.

The water entering Water Pipe overflows upward through its port and passes in a thin film over the **ENTIRE OUTER SURFACE** of the steam pipe, hugging its surface on both sides closely all the way around until, at bottom of steam pipe, it is broken up into two sheets of fine spray. There the warm water meets the steam.

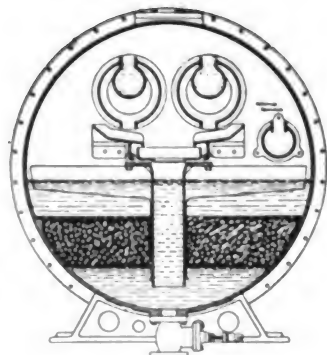
Therefore, the cold water is first heated through contact with the thin walls of the water pipe; next, as it passes over the outer hot surface of the steam pipe; and, finally, all the water and steam are in direct and actual contact when the steam passes through the two sheets of fine hot spray, thus heating the water to the highest temperature in shortest time.

LARGE WATER-CARRYING CAPACITY—The Heaters have an unusually large water-carrying capacity. This also affords an opportunity for **RECEIVING RETURNS FROM A HEATING OR DRYING SYSTEM WITHOUT ANY WASTE.**

METHOD OF FILTRATION AND PURIFICATION—The heated water and condensed exhaust steam are carried to a large sediment chamber at bottom of Heater, where the heavy impurities settle out of the water. The water then passes **UPWARD** through a filter bed, which retains the impurities not left in sediment chamber.

Above the filter bed is the pure hot-water chamber, from which the water flows direct to the pump. If filter bed becomes clogged, heated water is automatically fed direct to pump. In case filter bed should break and fall, the filtering material could never be carried to the pump, as would be the case in **DOWNWARD** filtration.

CROSS SECTION THROUGH BODY OF HEATER SHOWING FILTERING BED

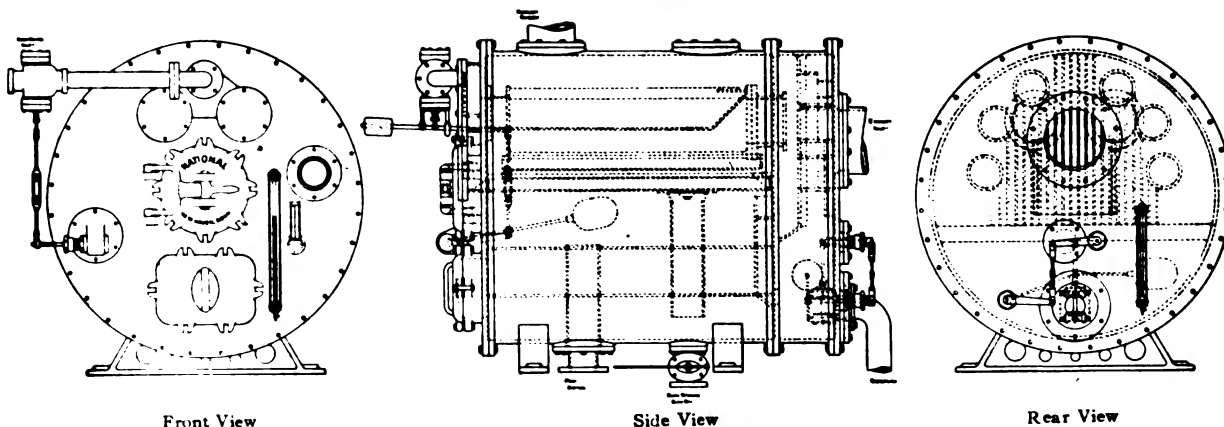


DETAILS—BLOW-OFF—The Heater has a bottom blow-off with quick-opening valve for washing out sediment chamber, draining Heater, and sending a **REVERSE CURRENT** through filter bed. Through large openings, the Heater may be examined or cleaned without disturbing any pipe connections, and it is furnished with a skimmer for surface blow-off and also for overflow to sewer. It drains to sewer automatically.

SHELLS—The shells are cylindrical in form and cast in one piece.

JOINTS—All joints on Heater are machined and come together iron to iron.

GENERAL—Materials and workmanship are the best possible. All necessary fittings are furnished with the Heater and are of the highest grade.



VIEW SHOWING DESIGN AND CONSTRUCTION OF NATIONAL DIRECT-CONTACT FEED WATER HEATER AND PURIFIER

Northern Equipment Company

Power Plant **NECO** Auxiliaries

CHICAGO, ILL.

AGENTS IN ALL LARGE CITIES

PRODUCTS — "COPES-NECO"
BOILER FEED REGULATORS;
"COPES-NECO" PUMP GOVERNORS;
"NECO" HIGH- and LOW-WATER
ALARMS and "NECO" CONTROL
CHECK VALVES

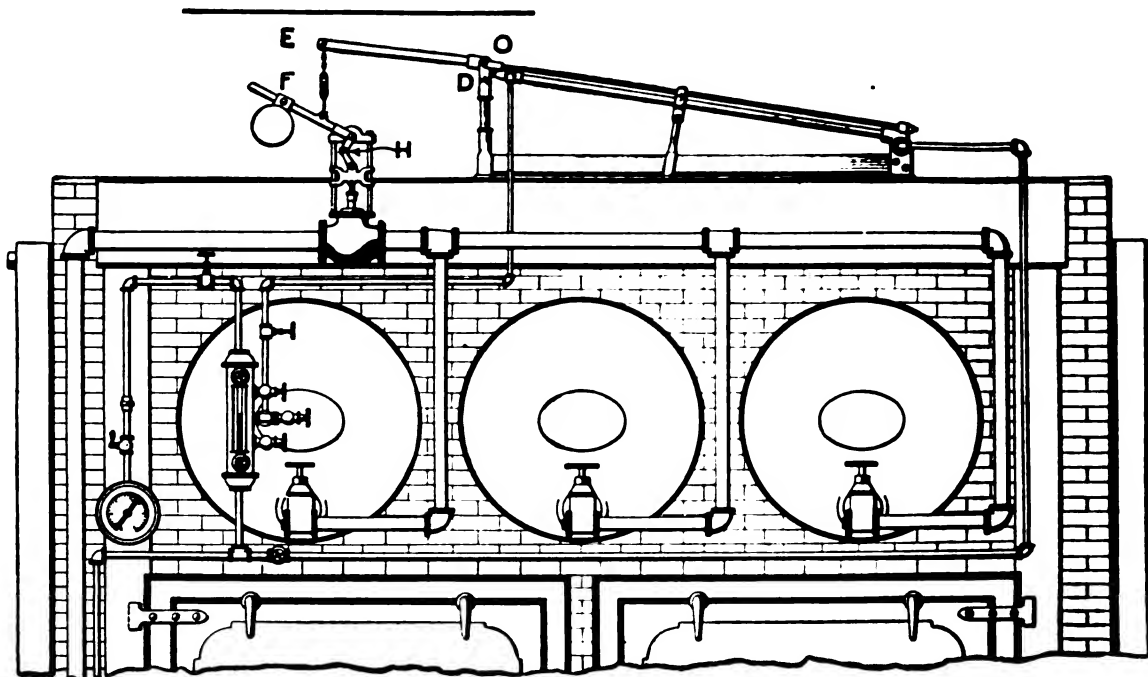
**"COPES-NECO" BOILER
FEED REGULATORS**—In-
stalled on boilers, the combined
capacity of which is over a million
horsepower. They feed in exact
proportion to evaporation, main-
taining a constant water level, pre-
venting boiler explosions due to
low water, and increasing the
plant economy by insuring dryer
steam, higher superheat and high-
er temperature of the feed water.

"Copes-Neco" Regulators are
made in two types, F and G, and
are absolutely reliable; there are
no diaphragms, springs, pistons or
other small parts to get out of
order.

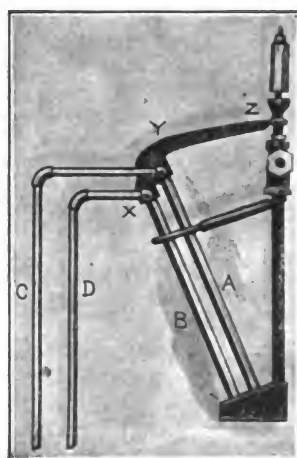
GUARANTEE — "Copes-Neco"
Regulators are guaranteed, against
defective material and workman-
ship, for a period of five years.
Any parts which, from any rea-
son, fail or wear out within this
period will be replaced by us free
of charge.

INSTALLATION—A "Copes-
Neco" Boiler-Feed Regulator on a
3-drum B. & W. Boiler is shown in
the accompanying drawing. The
Regulator consists of a valve placed
in the feed line, of a toggle (H)
and weighted lever (F), operated by
a bell crank lever (EOD), which is
in turn operated by the contraction
and expansion of a tube of special
alloy. This tube is connected at the
upper end (O) to the center gauge
of the water column, and at the low-
er end to the drain of the water col-
umn. With water below the middle
gauge, steam flows through and
heats and expands the tube, thus op-
erating the bell-crank lever and
opening the feed valve. On high
water the middle gauge is sealed, the
steam condenses in the tube and
water is drawn up. The tube, mean-
while cooling and contracting, shuts
the feed valve.

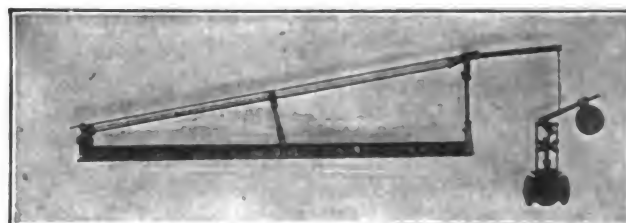
"A.B.C." SYSTEMS



TYPICAL INSTALLATION "COPES-NECO" BOILER FEED REGULATOR



"NECO" WATER ALARM



"COPES-NECO" REGULATOR TYPE F

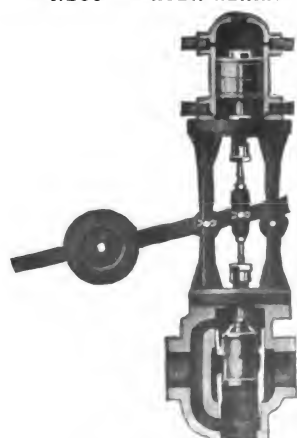
"NECO" HIGH- AND LOW-WATER ALARM—The
"Neco" Alarm, as shown in the illustration, consists of a whistle
and two thermostats which are conveniently placed above the
water line in the boiler. The whistle is sounded whenever the
water rises to, or drops below, a predetermined level, usually the
first and third gauges on the water column. The "Neco" Alarm
for all boilers is operated on thermostatic principles and is guar-
anteed in the same terms as is the "Neco" Regulator.

"COPES-NECO" PUMP GOVERNOR—As shown in the
accompanying illustration, it consists of a balanced steam valve,
a spindle connecting the steam valve, and a piston within a cylin-
der, and of a weighted lever attached to the spindle. The "Copes-
Neco" Pump Governor is used for maintaining a constant pres-
sure on the discharge of all types of pumps, and also for main-
taining a pressure which is in constant excess over any other
pressure—for instance, boiler pressure.

"NECO" CONTROL CHECK VALVE—
This device consists of an ordinary check valve
fitted with a special bonnet and hand wheel
which, on moving a spindle up and down, regu-
lates the maximum opening of disk and flow of
water into a boiler or other apparatus by turn-
ing the hand wheel. It, therefore, takes the
place of two valves, the ordinary hand and
check valves.



CHECK VALVE



"COPES-NECO" PUMP
GOVERNOR

E. Keeler Company

ESTABLISHED 1864

Manufacturers of

Boilers, Stacks and Tanks

200-300 WEST STREET

WILLIAMSPORT, PA.

NEW YORK, 50 Church Street
ROCHESTER, Powers Building
PITTSBURG, Arrott Building.

BOSTON, John B. Perkins Company, 141 Milk Street
PHILADELPHIA, Real Estate Trust Building
SAN FRANCISCO, H. F. Lyon Company

CHICAGO, People's Gas Building
RICHMOND, J. L. Lindsay, Inc.
CHARLESTON, W. Va.

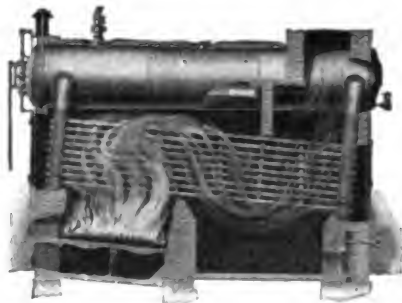
PRODUCTS—"KEELER" WATER-TUBE BOILER, "KEELER" CROSS-DRUM WATER-TUBE BOILER, "KEELER" RETURN TUBULAR AND INTERNALLY-FIRED BOILER, STEEL-PLATE WORK

"KEELER" WATER-TUBE BOILER—This Boiler presents the following valuable features:

STRAIGHT TUBES—They are four inches in diameter, and eighteen feet long. This makes a stiffer construction than a tube of smaller diameter. It is standard size and carried in stock everywhere.

WROUGHT-STEEL HEADERS—Cast-iron and cast-steel are unreliable in boiler construction under high pressure.

HORIZONTAL STEAM AND WATER DRUM—With steam outlet at the center, out of the way of the rush of steam and water at the front of the boiler.



"KEELER" WATER-TUBE BOILER

VERTICAL BAFFLE WALLS—By no other known arrangement of baffling can the outside surface of tubes be kept continuously clean. Vertical baffles make for maximum efficiency of the boiler.

REAR HEADER—Is protected from heat losses by means of hinged steel doors on an angle-iron frame.

HAND HOLE PLATES—Are of pressed steel, with bolts permanently riveted in position and are placed on the inside of the header. They are lighter and easier to handle than cast-iron plates with separate bolts, and do not break.

ERECTION—"Keeler" Water-Tube Boilers are erected complete and tested in the shop. This reduces the cost of erection, as the boilers are handled as a unit. It also eliminates possibility of careless assembling in the field.

CAPACITIES—80 to 500 horse power, for pressures from 150 to 250 pounds.

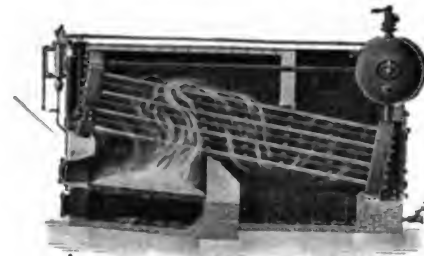
RECENT INSTALLATIONS OF "KEELER" BOILERS

Geo. M. Cohan's Theatre, New York, N. Y.
West Street Building, New York, N. Y.
Liberty Tower Building, New York, N. Y.
Warner Chemical Company, Cartaret, N. J.
Excelsior Hygienic Ice Co., Brooklyn, N. Y.
Chicago Stock Exchange Building, Chicago, Ill.
Cook County Infirmary, Oak Forest, Ill.
Gunn Furniture Co., Grand Rapids, Mich.
North Shore Railroad, San Francisco, Cal.
Powers Building, Rochester, N. Y.
Cutler Building, Rochester, N. Y.
Jacob Dold Packing Company, Buffalo, N. Y.
Elmira Water, Light & Railway Company, Elmira, N. Y.

The Corby Company, Washington, D. C.
Sheffield Scientific School, Mason Laboratory, New Haven, Conn.
Philadelphia Public Schools (14 boilers), Philadelphia, Pa.
Casey Hotel, Scranton, Pa.
Irem Temple, Wilkes-Barre, Pa.
Danville State Hospital, Danville, Pa.
Pennsylvania State Capitol Building, Harrisburg, Pa.
American Car & Foundry Co., Milton, Pa.
Pennsylvania Railroad Company, Northumberland, Pa.
American Gas & Electric Co., Plymouth, Jenkintown and Pottstown, Pa.

UNITED STATES GOVERNMENT
Isthmian Canal Commission, Handling Plants at Gatun and Miraflores
Bureau of Standards, Washington, D. C.
Coast Fortifications at The Presidio, San Francisco; Fort Stevens, Ore.; Fort Casey, Wash.; Fort Screven, Ga.; Grande Island, P. I.
Customs House, Baltimore, Md.
Engineer Department, Dam Number Twenty-Six, Ohio River
MUNICIPAL PUMPING STATIONS
Dunkirk, N. Y.; Fort Worth, Tex.; Fairmont, W. Va.; Clarksburg, W. Va., and Mission Street, Pittsburgh, Pa.

"KEELER" CROSS-DRUM WATER-TUBE BOILER—Was designed especially to meet conditions of space and ceiling height found in the basements of school houses and office buildings, and wherever the boiler must be introduced through restricted openings. The drum is horizontal and extends across the rear end of the setting. This arrangement makes the total height materially less than that of our standard type. The smoke outlet is



"KEELER" CROSS-DRUM WATER-TUBE BOILER

in front of and below the top of the drum, affording increased space for the accommodation of the smoke flue. The boiler is shipped in sections. To assemble the boiler it is necessary only to place the parts in position and expand the tubes.

CAPACITIES, SIZES—63 to 230 horse power.

"KEELER" RETURN TUBULAR AND INTERNALLY-FIRED BOILERS—Combine the same care in their construction, with the most modern shop methods and equipment, as do our other boilers.



"KEELER" RETURN TUBULAR BOILER

CATALOG—Our catalog, illustrating water-tube boilers, published April 1st, 1912, will be sent on request.

McClave-Brooks Company

Manufacturers of
Stokers; Shaking, Cut-Off and Dumping Grates, and Steam Blowers

NEW YORK OFFICE
351 Fulton Bldg., 50 Church Street

Main Offices and Works
SCRANTON, PA.

CHICAGO OFFICE
706 Fisher Building

PRODUCTS—McCLAVE GRATES: SHAKING, CUT-OFF AND DUMPING MOVEMENTS; SECTIONAL REMOVABLE TOP BARS
McCLAVE STOKER; McCLAVE FURNACES; McCLAVE ARGAND STEAM BLOWERS. All Kinds of IRON AND BRASS CASTINGS

THE McCLAVE SYSTEM—McClave Grates, with Argand Steam Blower, are designed for burning the cheaper and finer grades of fuel. Better combustion of fuels, such as anthracite buckwheat, birdseye, rice, bituminous slack, screenings, duff, etc., is produced by a forced draft. Grates Nos. 1 and 2 are principally used for Soft Coal; Nos. 3 and 4 for smaller sizes of Hard Coal. Grate bars are furnished with suitable mesh for the fuel to be burned, $\frac{1}{8}$ " mesh being the smallest. All burn larger sizes by natural draft.

DETAILS OF CONSTRUCTION—Grates No. 1 and No. 2 have an absolute cut-off movement in which each row can be operated as a whole, or the front and rear separately, as desired; also a shaking movement in which there is no increase in the openings between the bars, consequently no waste of unconsumed fuel.

In the No. 1 Grate the regular grate bars are cast integral, i. e., the top and pendant portions are cast in one piece. In the No. 2 Grate the regular grate bars are made with sectional removable tops, similar to the No. 3 Grate (see illustrations).

Grate No. 3 has a double cut-off movement, in which each row can be operated as a whole, or the front and rear separately. The grate bars are made with sectional removable tops.

Grate No. 4-A (illustrated) is a dumping grate fitted with twin levers for operating the front and rear series of bars separately. The grate bars are made with sectional removable tops which overlap each other, and have beveled edges which allow for the expansion of the top without interfering with the use of firing tools when cleaning fire.

All journal bearing bars have expansion tops made with locking caps and plugs over the journals which prevent the bars from jumping out of the journals when cleaning the fire. All forgings and fittings are drop-forged.

ARGAND STEAM BLOWER—Designed and improved for furnishing blast to burn *cheaper grades* of hard and soft coal. They furnish a large volume of air with a small amount of steam—both being thoroughly mixed in the shell or case. They are almost noiseless in operation. Capacities are based on 90 to 100 lbs. steam pressure.

DATA FOR ARCHITECTS, ENGINEERS AND OWNERS—McClave grates have no long lines of metal in contact with the heat, consequently cannot warp from the action of the heat of the fire on the grate. The sectional tops are interchangeable and easily replaced when required.

The movements of the grate provide methods for cleaning fires in the least possible time and without waste of unconsumed fuel.

Grate bars are made with different sized meshes to suit the various grades and sizes of fuels, from $\frac{1}{8}$ " upwards.

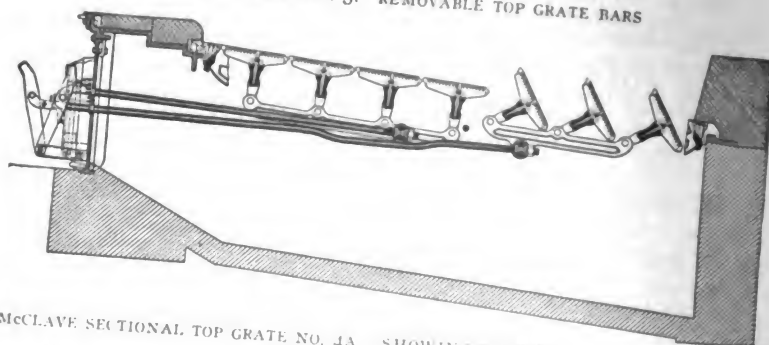
The constructions as a whole are very strong and durable. Illustrated Catalog "C" furnished on application.



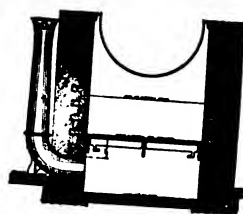
McCLAVE GRATE NO. 1. DIVIDED CUT-OFF MOVEMENT, FRONT SERIES



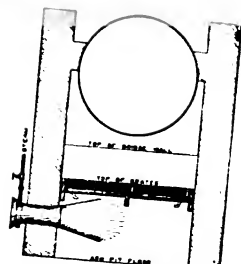
McCLAVE GRATE NO. 3. REMOVABLE TOP GRATE BARS



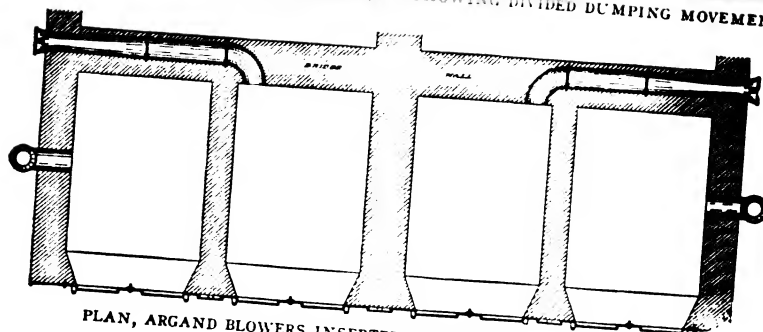
McCLAVE SECTIONAL TOP GRATE NO. 4A. SHOWING DIVIDED DUMPING MOVEMENT



HIGH DUTY BLOWER
WITH ELBOW
Inserted through side wall.



ARGAND BLOWER IN
SINGLE BOILER
Inserted through side wall



PLAN, ARGAND BLOWERS INSERTED IN BATTERY OF FOUR BOILERS

"A.B.C." SYSTEMS

Harrisburg Star Boiler Co.

General Selling Agents for

HARRISBURG MANUFACTURING & BOILER CO.

Manufacturers of

Star Safety Water-Tube Boilers

Agency

PENNSYLVANIA
H. H. Brooks
Land Title Bldg., Philadelphia, Pa.

1 MADISON AVENUE

NEW YORK, N. Y.

Agency

OHIO, INDIANA and MICHIGAN
C. W. Otis
2338 No. Erie St., Toledo, O.

PRODUCTS—"STAR" SAFETY WATER-TUBE BOILERS for Power, Steam Heating and Hot-Water Heating

DESCRIPTION—Our "Star" Safety Water-Tube Boiler is a self-contained, internally fired, steel water-tube boiler. Made complete, easily and quickly installed, and does not require the usual brickwork enclosure of other water-tube boilers.

TO THE ARCHITECT—The problem of placing a boiler of the required power in a small space is often a serious one, and the Star Boilers always solve the problem.

PERFECT COMBUSTION—The "Star" Boiler, with its correctly proportioned grate surface and large combustion chamber, has an airtight furnace into which air enters only through the grates.



"STAR" POWER BOILER

DIMENSIONS OF HIGH-PRESSURE BOILERS

No.	Horse Power	Width of Boiler	Depth of Boiler	Height of Base	Total Height	High Water Line	Diam. Flue, Inches	Grate Area, Sq. Ft.	Radi'or Surface, Sq. Ft.	Covering, Sq. Ft.	Wght. Lbs.
202	14	3' 2"	5' 3"	1' 4"	6' 0"	5' 1"	12	6	1184	70	5000
203	16	3' 2"	5' 9"	1' 4"	6' 0"	5' 1"	13	7	1336	70	6000
204	18	3' 2"	6' 3"	1' 4"	6' 0"	5' 1"	14	8	1456	80	6500
205	25	3' 2"	7' 0"	1' 4"	6' 7"	5' 7"	15	10	1952	90	7000
206	28	3' 2"	8' 0"	1' 4"	6' 7"	5' 7"	17	11	2224	100	7500
207	36	3' 6"	8' 6"	1' 4"	6' 10"	5' 9"	18	13	2920	120	8000
208	42	3' 6"	9' 10"	1' 5"	6' 11"	5' 10"	20	15	3798	140	8500
209	50	4' 2"	9' 2"	1' 5"	7' 2"	6' 1"	21	17	4437	140	9500
210	60	4' 2"	9' 10"	1' 5"	7' 4"	6' 3"	22	18	5400	150	11,000
211	65	4' 2"	10' 6"	1' 6"	7' 5"	6' 4"	23	19	6320	160	12,000
212	70	4' 2"	11' 4"	1' 6"	7' 5"	6' 4"	23	19	6900	170	13,000
213	75	4' 2"	11' 4"	1' 6"	7' 8"	6' 7"	25	21	7540	180	14,000
214	85	4' 8" 11'	6' 11'	1' 8"	7' 11"	6' 10"	26	25	8250	180	15,000
215	90	4' 8" 11'	6' 11'	1' 8"	8' 3"	7' 1"	28	26	9000	190	16,000
216	100	4' 8" 13'	0"	1' 8"	8' 3"	7' 1"	30	28	10,250	200	17,000
217	110	4' 8" 13'	0"	1' 8"	8' 3"	7' 1"	30	28	10,970	210	18,000
218	125	4' 11" 13'	0"	1' 8"	9' 2"	7' 11"	34	31	12,400	220	19,000
219	135	4' 11" 13'	0"	1' 8"	9' 8"	8' 3"	34	31	13,470	230	19,500
220	150	4' 11" 13'	0"	1' 8"	9' 8"	8' 3"	34	31	14,530	270	20,500
221	175	5' 9" 14'	0"	2' 0"	10' 2"	8' 7"	37	37	17,060	300	24,000
222	200	5' 9" 15'	0"	2' 0"	10' 6"	8' 11"	39	40	19,850	320	28,000
223	250	6' 11" 15'	0"	2' 0"	10' 6"	8' 11"	40	48	24,850	370	35,000
224	300	6' 11" 18'	0"	2' 0"	10' 6"	8' 11"	42	57	29,750	390	40,000

Boilers Nos. 202 to 215, inclusive, have cast-iron bases and brick bridge walls.
Boilers Nos. 216 to 223, inclusive, have brick bases and brick bridge walls.

"A.B.C." SYSTEMS

FUEL ECONOMY—The combustion heat is absorbed by the surrounding water surface and cannot escape until it passes over the entire heating surface of boiler. Therefore our "Star" boilers with their large heating surface will reduce to a minimum the loss of heat by way of the stack.

LARGE HEATING SURFACE—"Star" Boilers have 10 square feet of heating surface to the horsepower. They could be rated as low as other boilers manufactured (6 or 7 square feet per horsepower), but at the expense of fuel economy. Our liberal rating of the "Star" gives great reserve power.

INSTALLATION—The "Star" Water-Tube Boilers are less in height than, and occupy about one-third the floor space of, any brick-set boiler. Their low height saves the expense of the usual boiler pit. For steam-heating work, the low water line is another point in their favor.

These boilers are built to meet the requirements of the States of Massachusetts and Ohio and of the City of Detroit, Mich.



"STAR" HOT-WATER AND STEAM-HEATING BOILER

DIMENSIONS OF STEAM-HEATING BOILERS

No.	Width of Boiler	Depth of Boiler	Height of Base	Total Height	High Water Line	Diam. Flue, Inches	Grate Area, Sq. Ft.	Radi'or Surface, Sq. Ft.	Covering, Sq. Ft.	Weight, Lbs.
102	3' 2"	5' 3"	1' 4"	5' 9"	5' 1"	12	6	1184	70	4000
103	3' 2"	5' 9"	1' 4"	5' 9"	5' 1"	13	7	1336	70	5000
104	3' 2"	6' 3"	1' 4"	5' 9"	5' 1"	14	8	1456	80	5500
105	3' 2"	7' 0"	1' 4"	6' 4"	5' 7"	15	10	1958	90	6000
106	3' 2"	8' 0"	1' 4"	6' 4"	5' 7"	17	11	2224	100	6500
107	3' 6"	8' 6"	1' 4"	6' 7"	5' 9"	18	13	2920	120	7000
108	3' 6"	9' 10"	1' 5"	6' 8"	5' 10"	20	15	3800	140	7500
109	4' 2"	9' 2"	1' 5"	6' 11"	6' 1"	21	17	4437	140	8500
110	4' 2"	9' 10"	1' 5"	7' 1"	6' 3"	22	18	5400	150	10,000
111	4' 2"	10' 6"	1' 6"	7' 2"	6' 4"	23	19	6320	160	11,000
112	4' 2"	11' 4"	1' 6"	7' 2"	6' 4"	23	19	6900	170	12,000
113	4' 2"	11' 4"	1' 6"	7' 5"	6' 7"	25	21	7540	180	13,000
114	4' 8" 11'	6' 11'	1' 8"	7' 8"	6' 10"	26	25	8250	180	14,000
115	4' 8" 11'	6' 11'	1' 8"	8' 0"	7' 1"	28	26	9000	190	15,000
116	4' 8" 13'	0"	1' 8"	8' 0"	7' 1"	30	28	10,250	200	16,000
117	4' 8" 13'	0"	1' 8"	8' 0"	7' 1"	30	28	11,000	210	17,000
118	4' 11" 13'	0"	1' 8"	8' 11"	7' 11"	34	31	12,400	220	18,000
119	4' 11" 13'	0"	1' 8"	9' 5"	8' 3"	34	31	13,500	230	19,000
120	4' 11" 14'	0"	1' 8"	9' 5"	8' 3"	34	31	14,500	270	20,000
121	5' 9" 14'	0"	2' 0"	9' 11"	8' 7"	37	37	17,000	300	21,000
122	5' 9" 15'	0"	2' 0"	10' 3"	8' 11"	39	40	20,000	320	22,000

Boilers Nos. 102 to 115, inclusive, have cast-iron bases and brick bridge walls.
Boilers Nos. 116 to 122, inclusive, have brick bases and brick bridge walls.

Hewes & Phillips Iron Works

ESTABLISHED 1845

NEWARK, N. J.

Contracting Engineers and Manufacturers of PATENT DOUBLE-PORTED CORLISS ENGINES, SIMPLE OR COMPOUND, CONDENSING AND NON-CONDENSING for either Belted or Direct-connected Electrical Drives. Equipped with FRANKLIN PATENT HORIZONTAL GRAVITY-LATCH RELEASING VALVE GEAR

Also CORLISS FOUR-VALVE ENGINES, NON-RELEASING TYPE. Equipped with Robb-Armstrong-Sweet Inertia Shaft Governor, Automatic Unit-Tank Oiling and Filtering System. SPECIALLY DESIGNED AND CONSTRUCTED FOR DIRECT-CONNECTED ELECTRICAL INSTALLATIONS IN COMMERCIAL BUILDINGS

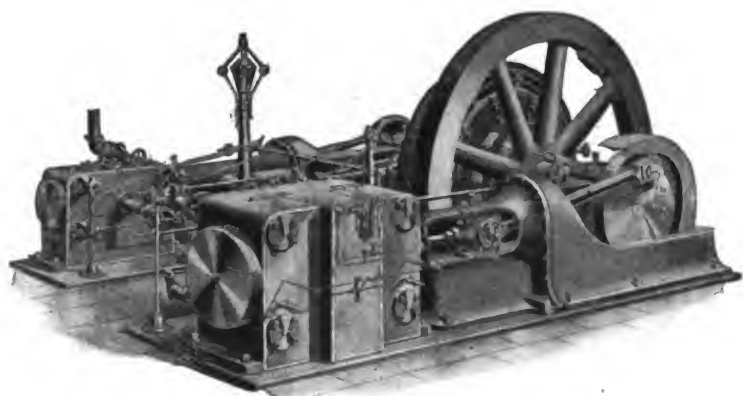
NAYLOR VORTEX STEAM SEPARATORS

INDEPENDENT STEAM-DRIVEN VENTURI AIR PUMPS AND CONDENSERS

BAROMETRIC CONDENSERS

HEAVY IRON & BRASS CASTINGS

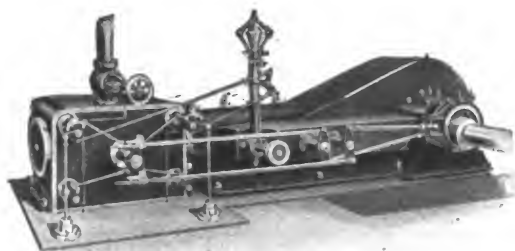
COMPLETE STEAM POWER PLANTS A SPECIALTY



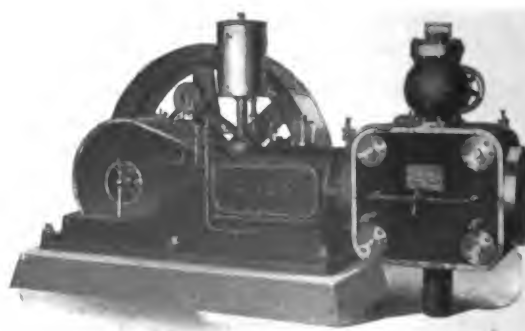
CROSS COMPOUND HEAVY-DUTY ENGINE
ROTATIVE SPEED 100 TO 150 REV. PER MIN.



TANDEM COMPOUND HEAVY-DUTY ENGINE
ROTATIVE SPEED 100 TO 150 REV. PER MIN.



FRANKLIN
CORLISS HEAVY-DUTY ENGINE, RELEASING VALVE GEAR
ROTATIVE SPEEDS 150 TO 200 REV. PER MIN.



AJAX
CORLISS FOUR-VALVE ENGINE, INERTIA SHAFT GOVERNOR
ROTATIVE SPEEDS 200 TO 250 REV. PER MIN.

For Further Information and Details Send for Our Catalog.

"A.B.C." SYSTEMS

Nelson Valve Company

Manufacturers of

Gate, Globe, Angle and Check Valves

30 CHURCH STREET

NEW YORK

FACTORY AT CHESTNUT HILL, PHILADELPHIA

NEW YORK
Hudson Terminal Building
30 Church Street
CHICAGO
17 West Kinzie Street
PHILADELPHIA
Real Estate Trust Building
PITTSBURGH
517 Liberty Avenue

MINNEAPOLIS
622 Andrus Building
BUTTE, MONT.
56 East Broadway
SAN FRANCISCO
22 Battery Street
MONTREAL
12-14 University Street

PRODUCTS—GATE VALVES. All with the **NELSON** TAPERED DOUBLE DISCS. The simplest mechanism, yet the most effective. Are made in all sizes, for all purposes, for any pressure. **BRONZE VALVES.** **IRON VALVES** WITH BRONZE TRIMMINGS. **ALL-IRON VALVES.** **STEEL VALVES** WITH BRONZE TRIMMINGS for extreme hydraulic pressures or for unusual saturated steam service. **STEEL VALVES** WITH MONEL TRIMMINGS for superheated steam. **ALSO HYDRAULICALLY-OPERATED VALVES,** AND VALVES WITH ELECTRIC CONTROL; **QUICK-OPENING LEVER VALVES;** **HOSE VALVES;** **INDICATOR VALVES**

GLOBE AND ANGLE VALVES—Any size, for any purpose or pressure. Smaller sizes in bronze, large sizes in iron, with discs to suit any requirement. Made also in steel for extreme pressures and for superheated steam

CHECK VALVES — VERTICAL CHECKS; HORIZONTAL CHECKS; SWING CHECKS; also NON-RETURN STOP VALVES. For water, saturated steam, superheated steam or other fluids

CLAIMS AND GUARANTEE—Each **NELSON** Valve

VALVES,
Bronze

Globe

Angle

Regrinding

Hose

Horizontal Cup
Check

Vertical Check

Swing Check

Gate

Lever Gate

Steel Gate
Valves for Superheated Steam

"A.B.C." SYSTEMS



THE NELSON VALVE FACTORY
Specially designed and equipped for our work
You are invited to inspect our plant

is tested to more than double the pressure for which the valve is to be used. This rigid test finds any flaw in the metal that may have escaped the visual inspection of our inspectors; it is the **final proof** of the valve's ability to perform its rated service and enables us to stand back of every valve we supply. The **NELSON** policy is to spare no care in manufacture to insure that the valves shall stay in order and prove lastingly satisfactory to the Architect and user.

HOW TO SPECIFY—"All the valves required for the work herein described to be **NELSON** Valves, made by the Nelson Valve Company, Philadelphia, Pa."

NOTE—NELSON Valves are patented. The **NELSON** trade mark is registered.

The following are a few of our references:

New York Edison Co., New York. — La Salle Hotel, Chicago.
Westinghouse, Church, Kerr & Co., New York.
Emigrant Bank Bldg., New York. — Morris Building, Philadelphia.
General Electric Co. — Y. M. C. A., Central Branch, Philadelphia.
Prudential Building, Newark, N. J. — American Locomotive Co.
Cleveland Illuminating Co., Cleveland, Ohio.
Blackstone Hotel, Chicago. — Western Electric Co., Chicago, Ill.
Sherman House, Chicago. — Curtis Publishing Co., Philadelphia.



VALVES,
Iron Body

Gate

Lever Gate

Indicating

Geared

Hydraulically-
operated

Electrically-
operated

Globe

Angle

Steel Globe
Valves for Superheated Steam

Our undivided attention is given to the manufacture of high-grade valves. We make nothing else. The above cut shows a few of the valves we make. We have our own foundries. All of our Bronze, Iron and Steel castings are made in our own plant.

The Kelly & Jones Co.

Manufacturers of

Iron and Brass Valves, Fittings and Specialties
for Steam, Gas, Water, Air and Oil

GREENSBURG, PA.

NEW YORK OFFICE
2509-11 Park Row Bldg.

CHICAGO OFFICE
416 Ashland Block

DENVER
Gas & Electric Building

PITTSBURGH OFFICE
135 Water Street

ST. LOUIS OFFICE
1619 Pierce Bldg.

SAN FRANCISCO
The Monadnock

PRODUCTS—CAST-IRON, MALLEABLE AND BRASS FITTINGS of all kinds; FLANGED FITTINGS, LONG-TURN FITTINGS, DRAINAGE FITTINGS; WROUGHT PIPE NIPPLES AND COUPLINGS; BRASS AND MALLEABLE UNIONS; BRASS VALVES; BRASS AND IRON COCKS; RADIATOR VALVES; IRON-BODY VALVES

FLOOR STANDS; FOOT VALVES; ENGINE, BUTTERFLY AND THROTTLE VALVES; BLOW-OFF VALVES; DAMPER REGULATORS; LUBRICATORS; PIPE HANGERS; BEAM CLAMPS, and a full line of PLUMBERS' BRASS GOODS



CAST-IRON FITTINGS (RECESSED)

CAST-IRON FITTINGS—RECESSED—All K & J Cast-iron Fittings are recessed, uniform in design, of a good weight, machine work absolutely correct in every detail.

Made in every conceivable style and size.

Standard for 125 pounds pressure, extra-heavy for 250 pounds.

Screwed or flanged.



CAST-IRON DRAINAGE FITTINGS (SPECIAL RECESSED)

CAST-IRON DRAINAGE FITTINGS—SPECIAL RECESSED—We make a complete line of Cast-iron special recessed Fittings for modern drainage systems, including Elbows, all styles and degrees; Tees, plain and reducing; Y's, all styles, plain and reducing; Closet Elbows and Flanges; Closet Tees.

Increases; Roof Connections, Base Elbows, Cappings for Air Inlet Pipes; Crosses, Offsets, Couplings, Sink Couplings, Traps and Drainage Street Elbows.



MALLEABLE-IRON FITTINGS

MALLEABLE-IRON FITTINGS—FLAT-BAND, BEADED OR PLAIN—All K & J Malleable Fittings are thoroughly annealed and entirely free from defects. Threaded to a uniform gauge.



Made in all styles and sizes.

Standard for 150 pounds pressure, extra-heavy for 300 pounds.



Globe



Gate
IRON-BODY VALVES



Angle

IRON-BODY VALVES—STANDARD FOR 125 POUNDS PRESSURE, EXTRA-HEAVY 250 POUNDS, HYDRAULIC 800 POUNDS—We make an iron-body valve for every purpose, screwed or flanged, inside screw or O. S. & Y., regular or Jenkins' Disc, Globe, Angle, Cross or Check.

Iron-body Gate Valves are made screwed, flanged, or hub-end, Peet or Wedge pattern. All pressures.



"Excelsior"



Jenkins' Disc
BRASS VALVES



Radiator

BRASS VALVES—STANDARD FOR 125 POUNDS PRESSURE, MEDIUM 200 POUNDS, EXTRA-HEAVY 300 POUNDS—Our "Excelsior" Regrinding Valve is the best high-pressure valve on the market.

Our Jenkins' Disc Valves have been standard for years. Made of the best quality brass, and neat in appearance. Standard pattern for 125 pounds pressure; special pattern for 100 pounds.

Radiator Valves made in all styles and sizes.

Brass Gate Valves for all purposes.

POWER-PLANT EQUIPMENT—We make a specialty of Power-plant Equipments, and earnestly solicit the specifications of engineers or architects.

TO ARCHITECTS—We shall appreciate your request to send you a copy of our complete catalog.

"A Valve or Fitting for Every Purpose"

"A.B.C." SYSTEMS

Armstrong Cork Company

INSULATION DEPARTMENT

Manufacturers of

Nonpareil High Pressure Covering for Steam Lines Boilers and all Heated Surfaces

1421 UNION BANK BUILDING

PITTSBURGH, PA.

BRANCHES IN ALL THE LARGE CITIES

PRODUCTS—NONPAREIL HIGH PRESSURE COVERING for High Pressure and Superheated Steam Lines, Boilers, Breechings and Other Heated Surfaces

Also, NONPAREIL CORK COVERING for Brine, Ammonia, Ice-Water and Cold Water Lines, and NONPAREIL CORKBOARD INSULATION for Cold Storage Warehouses, Refrigerators, etc.

SERVICES—Contractors for hot pipe and boiler coverings.

NONPAREIL HIGH PRESSURE COVERING—It is composed of diatomaceous earth and asbestos fibre and is especially designed to meet the demand for a heat insulating material suitable for the extreme conditions of temperature and pressure encountered in modern engineering practice.



DIATOMACEOUS EARTH UNDER THE MICROSCOPE

Diatomaceous earth is a peculiar white substance of remarkably low specific gravity. It consists of skeletons of microscopic plants, known as diatoms, which existed in the sea bottoms ages ago. These minute bodies, which are practically pure silica, can be seen under the microscope in a multitude of different forms. All are hollow, and contain air; and as there are billions of them to the cubic inch, diatomaceous earth is naturally an excellent non-conductor of heat.

In the form of plastic cement, diatomaceous earth has long been used in Europe for heat-insulating purposes. Until recently, however, no satisfactory process was available by which it could be bonded together in sectional form so as to produce a strong, efficient pipe covering for high-pressure work. After years of research this problem has been successfully solved and Nonpareil High Pressure Covering is the result. This new covering has already been installed in hundreds of plants throughout the country. A partial list of concerns using it may be found in our catalog.

INSULATING EFFICIENCY—The most efficient heat insulation is that which contains the largest amount of "dead-air," or, in other words, the greatest number of the smallest possible

air spaces. This being the case, and bearing in mind the peculiar porous structure of diatomaceous earth, the reason for the superiority of Nonpareil High Pressure Covering as a nonconductor of heat is perfectly clear. The material contains **more entrapped air** than its competitors.

The only air confined in the high pressure coverings heretofore used is that caught in the voids between the minute interlacing crystals composing them. In Nonpareil Covering there is not only a large amount of air entrapped in the interstices between the diatoms, which are of all shapes and sizes, but the diatoms themselves are hollow and full of air. Conclusive tests have demonstrated the superiority of Nonpareil Covering as a non-conductor of heat. These tests are reported complete in our catalog.



HIGH PRESSURE STEAM LINE INSULATED WITH
NONPAREIL HIGH PRESSURE COVERING
MERCHANTS' HEAT & LIGHT CO., INDIANAPOLIS, IND.

OTHER POINTS OF MERIT—Besides its remarkable insulating efficiency, Nonpareil High Pressure Covering possesses other points of superior merit:

1. It will withstand temperatures at which other coverings calcine and disintegrate.
2. It is unaffected by moisture or steam, being insoluble in water.
3. It is easy to apply.
4. It is reasonable in price.

Simple tests, which any one can make, demonstrating the truth of these assertions are fully described in our catalog.

SERVICE DETAILS—Nonpareil High Pressure Covering is made in sections 36 inches in length and furnished for all pipes of standard size up to 12 inches. Large pipes and boilers should be covered with Nonpareil High Pressure Blocks. For fittings and irregular surfaces Nonpareil High Pressure Cement should be specified.

CATALOG, SAMPLES—Our catalog, "Nonpareil High Pressure Coverings," a bound book of 72 pages, samples and discounts, will be furnished on request.

"A.B.C." SYSTEMS

H. W. Johns-Manville Co.

ALBANY
ATLANTA
BALTIMORE
BIRMINGHAM
BOSTON
BUFFALO
CHICAGO
CINCINNATI

CLEVELAND
DALLAS
DETROIT
DULUTH
HOUGHTON
HOUSTON
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KANSAS CITY

LOS ANGELES
LOUISVILLE
MEMPHIS
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MINNEAPOLIS
NEWARK, N. J.
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PHILADELPHIA
PITTSBURGH
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ROCHESTER
SAN FRANCISCO

SEATTLE
ST. LOUIS
ST. PAUL
SYRACUSE
TACOMA
WASHINGTON
WILKES-BARRE

ASBESTOS
TRADE MARK

For our Catalog on Building Materials see Section 6C, Cat. 3

For our Catalog on Roofing Materials see Section 26B, Cat. 8

For our Catalog on Refrigerating Machines and Insulating Materials see Section 32A, Cat. 5

For our Catalog on Electrical Materials see Section 42, Cat. 6

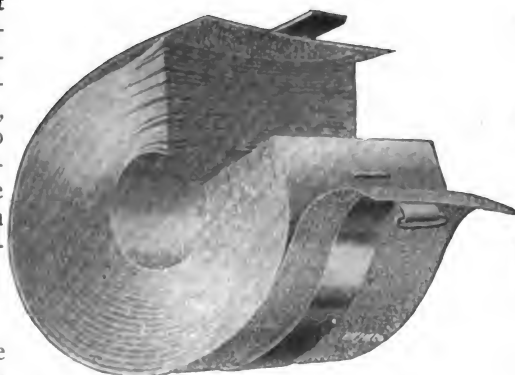
PRODUCTS—Pipe and Boiler Coverings: J-M ASBESTOCEL, J-M ASBESTO-SPONGE FELTED, J-M 85% MAGNESIA, J-M ASBESTOS FIRE-FELT, J-M VITRIBESTOS, J-M AIR CELL, J-M ANTI-SWEAT, J-M ZERO, J-M PLUMBING, J-M BRINE AND AMMONIA, J-M SHEETS AND BLOCKS for Boilers, Heaters, etc., J-M ASBESTOS AND MAGNESIA INSULATING CEMENTS, J-M SECTIONAL UNDERGROUND CONDUIT

To determine the saving that can be made by the use of efficient pipe covering, Mr. George H. Barrus, a well-known engineer, conducted a series of tests; the results of which were published in the official publication of the American Society of Mechanical Engineers. Following are results of test:

100 POUNDS PRESSURE AND UP			
Coal consumption for 10,000 sq. ft. of surface heated 365 days per year, 24 hours per day			
Kind of Covering	Tons of Coal Consumed	Cost of Coal at \$3.00 per ton	Cost of Covering Applied
Bare pipe	4,000	\$12,000.00	
Ordinary covering	791	2,373.00	\$1,320.00
J-M high pressure covering	585	1,755.00	1,980.00

J-M ASBESTO-SPONGE FELTED PIPE COVERING—

DESCRIPTION—J-M Asbesto-Sponge Felted Pipe Covering, for insulating high-pressure and superheated steam pipes, is made of layers of thin felt composed of pure, long-fibred asbestos and granulated sponge. Furnished in 3-foot sections, in thicknesses of $\frac{1}{2}$ to 3 inches, to fit all standard sizes of pipe. The sections are cut through one side only to facilitate application.



J-M ASBESTO-SPONGE FELTED PIPE COVERING

ADVANTAGES—

J-M Asbesto-Sponge Felted Pipe Covering is as full of air cells as a sponge, and every one of these cells is sealed, due to the laminated or layer construction. Thus an enormous amount of dead (motionless) air is confined, and dead air is the greatest non-conductor, making its insulating efficiency the greatest of any known high-pressure pipe covering.

Being made of many layers of strong felt, vibration or rough usage will not crack, break nor cause J-M Asbesto-Sponge Felted Covering to crumble or lose its insulating efficiency. It has been found in perfect condition after more than 15 years' service on underground pipes.

It can be removed and replaced as often as desired, without injury.

The high insulating efficiency of J-M Asbesto-Sponge Felted Pipe Covering is proven by the following:

These tests proved that J-M Asbesto-Sponge Felted Covering saves 26% more coal than ordinary coverings. It will, therefore, be seen that by re-covering with J-M Asbesto-Sponge Felted Covering pipes now insulated with ordinary coverings, a saving of \$780.00 can be made in every 1,000 tons of coal burned, figuring the cost of coal at \$3.00 per ton.

Another very desirable feature of this covering is that it materially reduces the temperature of engine rooms, adding to the comfort and efficiency of the operatives.

HOW TO SPECIFY—On connections from boilers to main steam header, and on the main steam header, apply J-M Asbesto-Sponge Felted Sectional Covering in two layers, each 1" thick, in such a manner that all joints will be "staggered" or "broken."

Cover fittings in connection with these pipes with J-M Asbesto-Sponge Cement Felting, to a thickness corresponding to the adjoining pipe covering.

Over all this covering apply an additional protection of 8-oz. canvas neatly sewed on.

On flanges of these pipes, apply J-M Asbesto-Sponge Felted Sectional Covering in such a manner that same can be removed and replaced without injury to covering, and finish same with 8-oz. canvas neatly pasted.

On all other pipes of the High Pressure System apply J-M Asbesto-Sponge Felted Sectional covering 1" thick, with its usual canvas finish and bands complete, covering the fittings with J-M Asbesto-Sponge Cement Felting to a thickness corresponding to the adjoining covering, and finished with canvas neatly pasted on.

Lacquered metal bands are to be applied at at least 18" intervals on all this covering.

Cover tops of boilers and boiler drum-ends with J-M Asbesto-Sponge Felted Sheets, $1\frac{1}{2}$ " thick, secured in place with galvanized wire cables and hexagonal wire netting and finish same hard and smooth with J-M Asbestos Cement, No. 302, $\frac{1}{4}$ " thick.

Cover smoke breeching and connections from boilers to vertical smokestack with 1½" thick J-M Asbesto-Sponge Felted Sheets, thoroughly secured with galvanized wire cables and hexagonal wire netting, with an air space 1" deep, formed with wire netting, with suitable offsets. Finish over the sheets with J-M Asbestos Cement, No. 302, ½" thick, trowelled hard and smooth.

Cover blow-off Tank, Return Tank, Pump Governor, Steam Separators, High-Pressure Drip Traps and Tank in same manner as breeching, but omitting air space.

On all covering exposed to the weather apply two coats of lead and oil paint, of colors as may be selected by Architect.

On other covering apply two coats of J-M Asbestos Fire-Proof Paint.

J-M ASBESTOCEL SECTIONAL PIPE COVERING—

DESCRIPTION—J-M Asbestocel Pipe Covering, for hot water heating pipes and low and medium pressure steam pipes, is built of successive layers of plain and corrugated asbestos paper on the arch principle, the channels running around the pipe. Made in thicknesses of ½ to 3 inches, to fit standard pipes ½ to 16 inches in diameter.



J-M ASBESTOCEL SECTIONAL PIPE COVERING

ADVANTAGES—

J-M Asbestocel is the most efficient low-pressure covering because it confines the greatest amount of dead air. J-M Asbestocel Pipe Covering is the only low-pressure covering we know of which confines air—and lots of it—in an absolutely dead state—the only one which permits no circulation whatever. In other coverings the air channels run from end to end and the air is, of course, continually traveling back and forth. But the air cells run around the pipe—each cell entirely separate in J-M Asbestocel Pipe Covering. Thus the spaces are so small that the air has no chance to circulate. Also, because of this arrangement of the air cells, J-M Asbestocel Pipe Covering is built on the arch principle and is therefore far stronger than other low-pressure coverings—doesn't crush down under weight—lasts longer than any other kind of low-pressure covering. It is absolutely fireproof, so completely removes the danger of fire from overheated furnaces and pipes, and prevents the rusting of pipes by protecting them from moisture.

The insulating efficiency of J-M Asbestocel Pipe Covering is proven by result of test given below, which is based on reports given in Vol. 23 of the Transactions of the American Society of Mechanical Engineers. These tests were made on 100 lineal feet of 2-inch pipe, carrying steam at 80 lbs. pressure. The following calculations of savings are based on plant working 300 days, of 10 hours each, with temperature of room about 65° F.

Name of Pipe covering	Condensation per hour	Net tons of coal consumed per year	Net tons of coal saved by use of covering	Cost of coal per net ton	Net saving in cost of coal per annum by use of covering	Approx. cost of covering
Bare pipe	59.16	7.76*		\$4.00	\$31.04 loss	
J-M Asbestocel	13.47	1.83	5.93	4.00	23.72 saving	\$16.20

*Standard coal as per 1890 code of boiler tests; that is, one pound of coal evaporating about 11 lbs. of water.

There are about 64 sq. ft. of pipe surface in 100 lineal feet of 2-inch bare pipe; the annual saving by the use of J-M Asbestocel Covering amounts to about 35 cents per sq. ft. of heated surface. Thus, the first year's saving will pay for the cost of covering and show a large interest return in addition. After the first year, the entire annual saving by the use of this covering is clear profit.

"A.E.C." SYSTEMS

HOW TO SPECIFY—On all Low-Pressure Steam and Hot Water Heating Pipes, and on hot water supply pipes, together with returns and drips from the former and circulation lines of the latter, apply J-M Asbestocel Sectional Covering, 1" thick, with regular canvas finish and lacquered metal bands on pipes, and J-M Asbestos Cement, No. 302, to a corresponding thickness on all fittings, traps, etc., in connection with these pipes, the cement to be finally jacketed with canvas pasted on to correspond with the adjoining pipe covering.

Where this covering is exposed to view, apply over same an additional protection of 8-oz. canvas neatly sewed on, and where exposed to the weather a further protection of two coats of lead and oil paint.

In all other places covering to be finished with two coats of J-M Asbestos Fire-proof Paint.

Cover Hot Water Heater with J-M Asbestos Cement, No. 302, 2" thick, secured with galvanized hexagonal wire netting and finished hard and smooth on exterior.

Cover Hot Water Tank with 1" thick J-M Asbestocel Sheets, secured with galvanized hexagonal wire netting, and finished hard and smooth with ½" thick J-M Asbestos Cement, No. 302.

Cover casings of Heating Stacks and connecting ducts from same to vertical flues in walls with J-M Asbestocel Sheets, 1" thick, all joints "pointed up" with Asbestos Cement, and all finally finished with 8-oz. canvas neatly sewed on.

Paint Heater, Tank and Stack and Duct Coverings to correspond with pipe covering.

J-M ANTI-SWEAT SECTIONAL PIPE COVERING—

DESCRIPTION—J-M Anti-Sweat Sectional Pipe Covering, for insulating cold water pipes, is made from layers of water-proof insulating paper and corrugated wool-felt, securely stitched together so that the covering does not depend upon paste or glue to hold it in shape. It is finished with a canvas jacket and has metal bands for fastening. Made in 3-foot sections in thicknesses of ½, ¾ and 1 inch, to fit all standard sizes of pipes. One inch thickness is recommended where pipes run through rooms at a temperature of 80° F. and upwards.



J-M ANTI-SWEAT SECTIONAL PIPE COVERING

ADVANTAGES—When pipes pass through atmospheres of higher temperature than the water inside them, condensation takes place on the surface of the pipes, which results in dripping. J-M Anti-Sweat Covering prevents this dripping by insulating the cold pipe from the warm atmosphere, thus preventing considerable damage to plaster, furnishings, etc. It is especially advantageous for insulating cold water drinking systems in office buildings, apartment houses, hotels and similar buildings.

HOW TO SPECIFY—On all ice water pipes and fittings, apply J-M Anti-Sweat Sectional Pipe Covering in two layers, each ¾" thick, in such a manner that all joints, both longitudinal and circumferential, shall be "staggered" or "broken."

On all other cold water pipes, except ice water (to prevent condensation) apply J-M Anti-Sweat Sectional Pipe Covering in one layer 1" thick.

Where the covering is exposed to view, apply over same an additional protection of 8-oz. canvas, neatly sewed on, and where exposed to the weather a further protection of two coats of lead and oil paint.

In all other places covering to be finished with two coats of J-M Asbestos Fire-proof Paint.

CLASSIFICATION PAGE OF
SECTION 29

Heating and Ventilating (Steam, Hot Water, Warm Air)

(High-pressure Boilers see Section 28)

(Pipe and Boiler Covering see Section 28)

(Registers for Heating and Ventilation see Section 15)

Section Synopsis

A. HIGH-PRESSURE STEAM HEATING AND VENTILATING ENGINEERING. Radiator and Coil Systems of Heating, all plans; Pressure-reducing Valves; Circulation Devices; Vacuum and Vapor Heating Systems; Hot-blast Systems of Factory Heating; Chamber-Blower Systems of Heating and Ventilation

Air Filtration, Tempering and Humidifying Apparatus; Grain Driers; Power Fans, all designs, Sheet-Iron Ducts, Chambers, etc.

B. LOW-PRESSURE STEAM AND HOT-WATER HEATING. Boilers of all designs; Coal, Artificial Gas, Natural Gas and Petroleum Firing; Garbage-burning Heaters, steam and water; Detail Equipment for Standard Systems; Direct, Indirect and

Direct-Indirect Design; Hot Water Circulators; Expansion Tanks

C. RADIATORS. General, and Special Coil and Pin Radiators; Wall Radiators; Pressed Steel Radiators; Patent Radiator Boxes; Regular and Special Radiator Valves; Air Valves; Gas-Steam Radiator Heaters; Automatic Temperature Regulating Systems; Damper Regulators; Boiler and Radiator Thermostats

D. WARM-AIR FURNACE HEATING. Furnaces of all designs, portable and brick-set; Coal, Artificial Gas, Natural Gas and Petroleum Firing; Combination Warm-air and Steam Furnaces; Piping, Register Boxes, etc.; Automatic Damper Regulators; Base-burner Stoves; Standard Heating Stoves

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX		
REGULAR CLASSIFICATION		
A	1	Air filtration, tempering and humidifying
	2	Grain driers
	3	High-pressure heating and ventilating engineering
	4	Hot-air blower heating, domestic, mill
	5	Power fans, all designs
	6	Pressure-reducing valves
	7	Steam circulators
	8	Sheet iron ducts, chambers, breeching, stacks, tanks, etc.
	9	Vacuum heating systems, pumps, etc.
	10	Vacuum pumps and pump governors
	11	Vapor heating systems
B	20	Expansion tanks
	21	Garbage-burning heaters
	22	Heat economizers
	23	Hot-water circulators, heating
	24	Low-pressure hot-water heating boilers, all designs
	25	Low-pressure steam-heating boilers, all designs
	26	Low-pressure return-flue boilers, cast-iron
	27	Low-pressure water-tube boilers, cast-iron
	28	Natural-gas-firing boilers
	29	Petroleum-firing boilers
	30	Soft-coal-firing boilers
31	Valves for natural-gas piping	

C	36	Automatic air valves:—	
	37	Hot-water radiator, all designs	
	38	Steam radiator, all designs	
	39	Damper regulators, mechanical	
	39	Heat regulators, electric	
		Radiators:—	
	40	Direct, indirect, special, cast-iron, all styles	
	41	Gas-steam heaters	
	42	Pressed steel	
	43	Radiator and register shields, screens	
	44	Radiator thermostats	
D	45	Radiator valves:—	
		Special, dial, threeway, packless, etc.	
	46	Special hot-water	
	47	Standard	
	48	Special radiator boxes, indirect heating	
	49	Thermostats, boilers, heaters	
	55	Base-burner stoves	
	56	Combination warm-air and hot-water furnaces	
	57	Combination warm-air and steam furnaces	
	58	Furnaces, portable, brick-set	
	59	Hot-air gravity ventilating system, furnace	
E	60	Natural-gas-firing furnaces	
	61	Petroleum-firing furnaces	
	62	Soft-coal-firing furnaces	
	63	Special register boxes and piping	
	64	Standard heating stoves	
	65	Wood-firing furnaces	
	SPECIAL CLASSIFICATION		
	Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.		
	73	Baltimore heaters (S. 41)	
	74	Bronzing liquids (S. 39 B)	

75	Domestic hot-water supply apparatus, heaters, tanks, stoves, etc. (S. 35 C)
76	Fireplace equipment (S. 41)
77	Fireplace grates, coal, gas (S. 41)
78	Gas water-heaters (S. 35 C)
79	Gas stoves, heaters, warming (S. 31 B)
80	General plumbing supplies (S. 35 A, B & D)
81	General steam-fitting supplies, gauges, traps, valves, pipe-covering, etc. (S. 28 C & D)
82	Green-house heaters (S. 23)
83	Heating and ventilating engineers (S. 2 A)
84	Kitchen ranges and equipment (S. 36 A)
85	Laundry stoves, etc. (S. 36 B)
86	Sleeves, steam pipe, special (S. 28 C)

TRADE NAMES AND BRANDS	
"Acme," radiator and register shields, and steam-pipe sleeves, Catalog C 4	Catalog B 1
"Aerial," indirect radiators	
"Breckenridge," automatic air valve	
"Gold Pin," indirect radiators	
"Imperial," direct radiators	
"Menlo," boilers	
"Mercer," boilers	
"Mills," boilers	
"Princess," direct radiators	
"School Pin," indirect radiators	
"X-Ray," direct radiators	
"American," steam and water boilers	Catalog B 5
"Florida," steam boiler	
"Little Giant," tank heater and laundry stove	

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.
		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90	
Catalog B 5	"Lorraine," line of radiators, steam, water						
	"Modern," steam and water boilers						
	"Spence," water boilers						
	"Touraine," steam and water boiler						
	"Atlas," syphon radiator air valves						
Catalog C 1	"Duplex," radiator air valves						Hess Warming and Ventilating Co. S. 40 A, Cat. 1 (Grain driers, hot-air furnaces)
	"Monash," vacuum pump governor, steam and water air valves, radiator shields						
	"Monash Teltown," automatic steam air valve and steam main vent						
	"Noiseless Radifier," vacuum system radiator air valve						
	"Climax," line of warm-air furnaces, heating stoves and kitchen ranges, Catalog D 4						
Catalog B 3	"Cripps," hot-water heating circulator, Catalog B 4						Kelly & Jones Co., The S. 28 C, Cat. 2 (Radiator valves, damper regulators, etc.)
	"Crawford," round steam and water boilers						
	"Crawford Cadet," round steam water boilers						
	"Walker," sectional steam and water boilers						
	"Dole," packless radiator valve and automatic air valve, Catalog C 3						
Catalog D 3	"F. & W. Co.," tank heaters						Mann & Esterly Co., The S. 36 B, Cat. 1 (Natural gas furnace, heating and ventilating systems)
	"Stewart," warm air furnaces						
	"Hess," hot-air furnace, S. 40 A, Catalog 1						
	"K. & J.," radiator valves, steam, water, S. 28, C., Catalog 2						
	"Kinealy," air purifier, cooler and humidifier, and thermal valve						
Catalog A 1	"Kauffman," radiator shields						Nelson Valve Company S. 28 C, Cat. 1 (Radiator valves)
	"Manest," natural gas furnaces, clothes driers, metal flour bins, S. 36 B, Catalog 1						
	"Manneapolis," thermostatic electric regulators, Catalog C 2						
	"Model," water and steam boilers and radiators						
	"Richmond," water and steam boilers and radiators						
Catalog B 2	"Nelson," radiator valves, S. 28 C, Catalog 1						Packer, Alfred A. S. 19 C, Cat. 1 (Electric fans and blowers and ventilating systems)
	"Sparks," automatic vacuum pump, air valve, and system of steam circulation, Catalog B 6						
	"Standard," steam and water boilers, warm-air furnaces, Catalog D 2						
	"Triumph," packless radiator valves, Catalog C 5						
Catalog B 4	"Cripps Mfg. Co., A. C., Akron, Ohio		23				Payne, John A. S. 23, Cat. 1 (Steam, hot-water and vacuum heating, and ventilating apparatus)
Catalog C 3	"Dole Valve Company, The Chicago, Ill.		37				
			45				
Catalog C 2	"Electric Heat Regulator Company Minneapolis, Minn.		31	38		81	
				39			
				49			
Catalog D 3	"Fuller & Warren Co., Troy, N. Y.				56	75	
					58	84	
					60	85	
					62		
					64		
Catalog B 6	"Iroquois Engineering Co., The Chicago, Ill.	7		37			
		9					
		10					
Catalog C 4	"Johnson & Son Co., W. H. Indianapolis, Ind.			43		86	
Catalog A 1	"Kauffman Heating & Engineering Co., St. Louis, Mo.	1		37			
		3		43			
		4					
		8					
		9					
Catalog D 1	"Kelsey Heating Company Syracuse, N. Y.	10					
		11					
Catalog B 2	"McCrum-Howell Co., The New York, N. Y.		24	40		75	
			25				
Catalog C 1	"Monash - Younker Co., Chicago, Ill.	6	36	37			
		10		43			
Catalog B 5	"Pierce, Butler & Pierce Mfg. Co., Syracuse, N. Y.		20	38		74	
			22	39		75	
			24	40		80	
			25	47		81	
						82	
Catalog B 7	"Shirley Boiler and Radiator Co., Shirley, Ind.		24	40		75	
			25			85	
Catalog B 1	"Smith Co., H. P., Westfield, Mass.		24	37			
			25	40			
			26				
			27				
Catalog D 4	"Taplin - Rice - Clerkin Co., Akron, Ohio				55		
					58		
					60		
					62		
					64		
Catalog C 5	"Triumph Valve Co., The Mansfield, Ohio			45			
				46			
				47			
Catalog B 3	"Walker & Pratt Mfg. Co., Boston, Mass.		24				
			25				

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 18	19 to 36	37 to 54	55 to 72	73 to 90		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90
Albany Foundry Co..... Albany, N. Y.				58 62		Columbus Heating & Vent- ilating Co..... Columbus, Ohio.				59		Harrison Engineering Co.... New York, N. Y.	7	23			83
American Bell & Foundry Co..... Detroit, Mich.				58 63		Connersville Blower Co..... Connersville, Ind.	4 5					Hart & Crouse Co..... Utica, N. Y.		24 5	40	57	
American Blower Co..... Detroit, Mich.	4 5					Continental Radiator & Foundry Co..... St. Louis, Mo.			40 41 43			Haswell's Steel Range & Fur- nace Co..... Circleville, Ohio				58 62	
American District Steam Co. Lockport, N. Y.	9					Corinth Engine & Boiler Works Corinth, Miss.	8	21		63		Haynes, Langenberg Mfg. Co. St. Louis, Mo.				57 58	
American Foundry & Mfg. Co. St. Louis, Mo.		36	37		85	Cox Stove Co., Abram..... Philadelphia, Pa.		24 25		58	79 84 85	Heggie, James D..... Joliet, Ill.	8	25 30			
American Radiator Co..... Chicago, Ill.		23 24 25	40 43 47	74 75 81 85								Henry & Scheible Co..... Cleveland, Ohio				58 60 62 63	
Andrews Heating Co..... Minneapolis, Minn.		20 24 25	49									Holland Furnace Co..... Holland, Mich.				58	
Augustine, A. C..... St. Joseph, Mo.	8	25 30										Honeywell Heating Special- ty Co. Wabash, Ind.		23	46 49		
												Hobson & Chapin Mfg. Co... New London, Conn.		24 25			
						Detroit Stove Works..... Detroit, Mich.				57 63	79	Houston, Stanwood & Gam- ble Co. Cincinnati, Ohio	8	25 28 29 30			
						Dover Boiler Works..... Dover, N. J.	8	24 25				Humphrey Co..... Kalamazoo, Mich.					78
						Dunham Co., C. A..... Marshalltown, Iowa	9 11										
Barstow Stove Co..... Providence, R. I.				62 65	84												
Bath Iron Works, Ltd..... Bath, Me.	8	28 29 30										Ill. Electric Ventilating Co.. Chicago, Ill.	5				
Beckwith Estate, P. D., Inc. Dowagiac, Mich.				57 58 60 62	79 84	Evans, Almirall & Co..... New York	7					International Heater Co..... Utica, N. Y.		24 25 28 30 36	37 41 49	57 58 60 62	
Beilman, W. E..... Buffalo, N. Y.				75 78		Excelsior Stove & Mfg. Co.. Quincy, Ill.				79 84 85		Interstate Mfg. Co..... Oskaloosa, Iowa				58 62	
Belser Water Heater Co..... Pittsburgh, Pa.				75 78													
Bibb Stove Co., B. C..... Baltimore, Md.				58 84 85	73 84 85							Jahant Heating Co..... Akron, Ohio				56	
Boynton Furnace Co..... New York, N. Y.		24 25		58	84							Jewell Mfg. Co..... Auburn, N. Y.			49		
Brien Heater Co..... Westfield, Mass.				58								Johnson Service Co..... Milwaukee, Wis.			49		
Buckwalter Stove Co..... Royersford, Pa.				57	79 84	Fargo Foundry Co..... Fargo, N. D.	8					Johnston Bros..... Ferrysburg, Mich.	8	24 25 30			
Buffalo Forge Co..... Buffalo, N. Y.	4 5					Farquhar Furnace Co..... Wilmington, Ohio	1		38 50 59 62 63 65	79 84 85		Kees Mfg. Co., F. D..... Beatrice, Neb.				38	
Buffalo Radiator Co..... Buffalo, N. Y.			40									Kellogg Mackay Co..... Chicago, Ill.		22 24 25	40 47	85	
						Floyd-Wells Co..... Royersford, Pa.				50 51 85		Kennicott Co..... Chicago Heights, Ill.	8			63	
						Fowler & Wolff Co..... Philadelphia, Pa.						Kenny Boiler & Mfg. Co. ... St. Paul, Minn.	8	21 24 25 30			77
												Kewanee Boiler Co..... Kewanee, Ill.	8	21 24 25 26	40		
Canton Art Metal Co..... Canton, Ohio				63		Garner, C. E..... Lansing, Mich.				72		Krue & Dewenter Co..... Indianapolis, Ind.				56	
Carpenter & Co., Cyrus..... Boston, Mass.				58	84 85	Gorton & Lidgerwood Co.. New York, N. Y.		24	45 47								
Carrier Air Conditioning Co.. New York, N. Y.	1					Gurney Heater Mfg. Co. Boston, Mass.			24 25								
Catchpole Boiler Foundry & Machine Co. Geneva, N. Y.		24 25										Lewis Furnace Co..... Marshalltown, Iowa				56 58	
Chapman Steam Specialty Co. Canton, Ohio	9		45									Lux, A. K. & Co. Cincinnati, Ohio	3				
Charter Oak Stove & Range Co. St. Louis, Mo.				58	62 79 84 85												78
Clark Co., Henry N. Boston, Mass.	8	23	38	63	85												

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
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						O'Brien Boiler Works Co., John St. Louis, Mo.	8	24 25 28 29 30	42			Stamford Gas Stove Co..... Stamford, Conn.					78 79
Lloyd, Henry D..... Watertown, Mass.	2 5											Stamford Foundry Co..... Stamford, Conn.				56 58	84 85
						Page Boiler Co., Wm. H..... New York, N. Y.		24 25				Sterling Blower Co..... Hartford, Conn.	4 5				
						Peck-Hammond Co..... Cincinnati, Ohio	4 5	21 25		57		Sturtevant, Co., B. F..... Hyde Park, Mass.	1 4 5				
McLain Co., J. H..... Canton, Ohio		24 25	40			Peck-Williamson Heating & Ventilating Co., Cincinnati, Ohio			39	58 83 85		Summit Foundry Co..... Geneva, N. Y.				58	84
Magee Furnace Co..... Boston, Mass.		24 25		56 75 84		Peninsular Stove Co..... Detroit, Mich.				57 79 58 84 85							
Majestic Furnace & Foundry Co., Huntington, Ind.				58 62		Phillips Heating, Ventilating & Mfg. Co., Los Angeles, Cal.	4			58 77 63 85							
Marsh & Co., Jas. P..... Chicago, Ill.		36	37 45 46 49			Pittsburg Water Heater Co., Pittsburgh, Pa.				78		Tagliabue Mfg. Co., C. J..... New York, N. Y.	6		38 44 49		
Marsh Valve Co..... Dunkirk, N. Y.			47			Pittston Stove Co..... Pittston, Pa.				58 84 85		Thatcher Furnace Co..... New York, N. Y.		23 24	38 40 45 46 47	57 58 62	84 85
Massachusetts Fan Co..... Watertown, Mass.	4 5					Portland Stove Foundry Co., Portland, Me.				58 77 84		Thermograde Valve Co..... Boston, Mass.		36	37 38 44 49		
May-Friberger Co..... Akron, Ohio				56 62		Powers Regulator Co..... Chicago, Ill.				39 49							
Mead Co., J. H..... New York, N. Y.			41			Pressed Radiator Co. of America Pittsburgh, Pa.				40 42		Tomahawk Iron Works..... Tomahawk, Wis.	8	24 25		58 84	
Miller Range & Furnace Co., Wm., Cincinnati, Ohio				57	79 84 85	Putnam Foundry & Ma- chine Co., Putnam, Conn.		24 25				Tubular Heating & Ventila- ting Co., Philadelphia, Pa.				57	
Mohr, John & Sons..... Chicago, Ill.	8	24 25 28 29 30	42														
Moline Vacuum Vapor Heat- ing Co., Moline, Ill.	9 11		38 45			Rapid Heater Co..... Grand Rapids, Mich.		24 25			75						
Monarch Ventilator Co..... New York, N. Y.	3 5					Rathbone, Sard & Co..... Albany, N. Y.				57	79 84	Union Iron Works..... Bangor, Me.	8				
Monierieff Furnace Co..... Atlanta, Ga.		24 25		56		Reading Stove Works..... Reading, Pa.		24 25			75 84 85	Union Radiator Co..... Johnstown, Pa.			40		
Mouat-Squires Co..... Cleveland, Ohio	11		38 45			Rhodes Mfg. Co..... Grand Rapids, Mich.				58		Union Stove Works..... New York, N. Y.		24 25	45 46 47	58	73 79 84 85
Monitor Steam Generator Mfg. Co., Landisville, Pa.		24 25				Richardson & Boynton..... New York, N. Y.		24 25		56	84 85	United States Radiator Cor- poration Detroit, Mich.		24 25	40 42 45 46 47		
Morse - Boulger Destructor Co., New York, N. Y.		21				Roberts, Winner & Co..... Quakertown, Pa.				58	84 85						
Mueller Furnace Co., L. J..... Milwaukee, Wis.		24 25 30		57 58		Rohan & Son Boiler Works Co., John St. Louis, Mo.	8	21 23 24 25 28				Vapor Heating Co..... Philadelphia, Pa.	11				
National Blower Works..... Milwaukee, Wis.	4 5 8					Roots Co., P. H. & F. M..... Connorsville, Ind.	5 9	23									
National Hot Air Furnace Co., Dayton, Ohio				62		Ruud Mfg. Co..... Pittsburg, Pa.					75 78						
National Radiator Co., Johnstown, Pa.		24 25	37 38 40 42 47			Schill Bros. Co., Crestline, Ohio				58	84 85	Wear, Frank M., New York, N. Y.		24 25		57	
Neiman Mfg. Co., New York, N. Y.		24 25	40 41 42			Schwab & Sons Co., R. J., Milwaukee, Wis.		24 25	56			Webster Co., Warren..... Camden, N. J.	1 7	22			
Nichols Iron Works, Inc., M., New York, N. Y.	8	24 25				Sill Stove Works, Rochester, N. Y.					79 84 85	Weir Stove Co..... Taunton, Mass.		24 25	38	57 58	79 85
Novelty Iron Co..... Canton, Ohio		25 26	40 42 43			Smith & Thayer Co., Boston, Mass.		24 25				Westwick & Son, John., Galena, Ill.				58	
						Southern Queen Range Mfg. Co., Chattanooga, Tenn.					84 85	Whitlock Coil Pipe Co., Hartford, Conn.					75 78
						Spicer Stove & Heating Co., James Philadelphia, Pa.		24 25	56 64	84 85		Williamsport Radiator Co. Williamsport, Pa.		24 25	40	56	
						Spencer Heater Co., Baltimore, Pa.		24 25				Wigert Boiler Works, David Galesburg, Ill.		24 25			
												Wood Mfg. Co., Conshohocken, Pa.					75 78
												Wood & Bishop Co., Bangor, Me.				58 65	
												Wrought Iron Range Co., St. Louis, Mo.				58 62	79 84 85

Kauffman Heating & Engineering Co.

Contracting Engineers

Heating, Ventilating and Humidifying Apparatus

Main Office and Factory
2109-11 OLIVE STREET

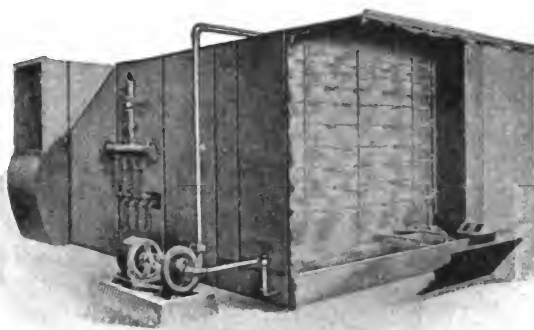
ST. LOUIS, MO.

REPRESENTATIVES
IN THE LARGEST CITIES OF U. S.

PRODUCTS—"KINEALY" AIR PURIFYING, COOLING AND HUMIDIFYING SYSTEM; "KINEALY" THERMAL-VALVE, AND "KAUFFMAN" DUSTLESS RADIATOR SHIELDS

DESCRIPTION—We are Heating and Ventilating Engineers and install complete Heating and Ventilating Systems for buildings of every description.

We design, manufacture and install The "Kinealy" System of air purifying, cooling, humidifying and de-humidifying which has been used in hundreds of Hospitals, Churches, Schools, Banks, Cafés, Textile Mills, Residences, Theaters, Chemical Laboratories, Railway Cars, Department Stores, Tobacco Warehouses, Factories, Breweries, Bakeries and Greenhouses in all parts of the world.



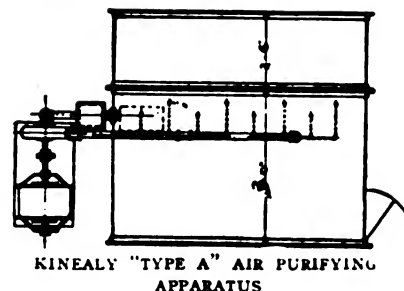
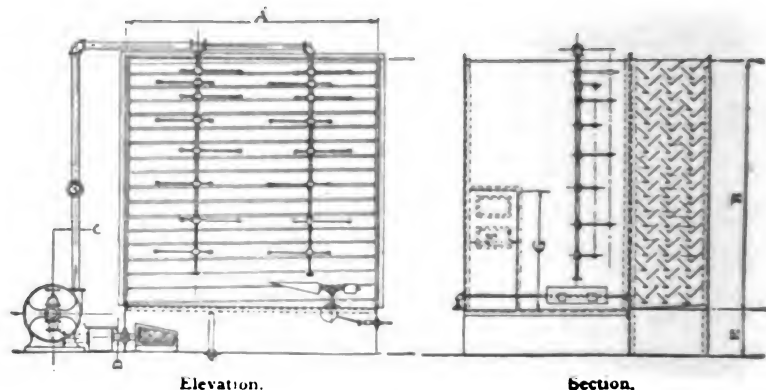
CUT SHOWING ARRANGEMENT OF KINEALY AIR PURIFIER AND APPARATUS IN OPERATION

"KINEALY" AIR PURIFIER, COOLER AND HUMIDIFIER—Consists of a large wash chamber, the casing of which is of galvanized iron, copper or concrete. By means of the fan, the air is forced through this chamber where it comes in contact with, first, a finely-divided form of water or mist that completely saturates the air, and, second, with two sheets of water that clean the air, so that it is impossible for the least particle of air to pass through this chamber without becoming moisture-laden and purified.

The air, on striking the successive curtains of water, has the heavier particles of dirt and foreign matter carried down into the tank, while the finer particles are carried to the Eliminators where the final work of separation between the air and moisture is completed, whence the water returns to the settling tank and is used again after being drawn through a series of patented strainers by means of a centrifugal pump.

The finely-divided mist and successive curtains of water are formed by a number of "Kinealy" Automatic Spray Heads arranged in tiers, discharging the water through their large orifice against the disc, thus breaking it up into a mist and so deflected as to form a sheet.

The patented automatic cleaning device, while automatically cleaning the spray heads, never changes the form of the spray



EXPLANATION—The eliminator chamber is the rear part of the plan and section.

The air is forced through the baffle plates and cleaned, and thence drawn off to be warmed and distributed.

The air duct connections are not shown, being part of the general heating and ventilating design.

during the operation and cleaning process. It does not require the entire apparatus to shut down while cleaning a stopped-up nozzle, as is the case with every other apparatus on the market. "Kinealy" Air Purifier, Cooler and Humidifier is the only one of its kind having three complete successive curtains of water.

DATA FOR "KINEALY" AIR WASHER, TYPE "A"

No.	Cu.Ft. per Min.	Area Sq. Ft.	H.P.	A	B	C	D	E	F	G	App. Wgt.
3	3000	10	1 1/2	3'-3"	3'-0"	1 1/2	2	1'-6"	1'-6"	3'-0"	1275
5	5000	16	1 1/2	4'-8"	3'-5"	1 1/2	2	1'-6"	1'-6"	4'-0"	1315
7 1/2	7500	22	2 1/2	5'-0"	4'-4"	2	2 1/2	1'-6"	1'-6"	4'-0"	1661
10	10000	27	2 1/2	5'-4"	5'-0"	2	2 1/2	1'-6"	1'-6"	4'-0"	1838
12 1/2	12500	33	2 1/2	6'-0"	5'-6"	2	2 1/2	1'-6"	1'-6"	4'-0"	1983
15	15000	38	3	6'-9"	5'-8"	2 1/2	3	1'-6"	1'-6"	4'-0"	2251
17 1/2	17500	44	3	7'-0"	6'-4"	2 1/2	3	1'-6"	1'-6"	4'-0"	2374
20	20000	49	3 1/2	7'-6"	6'-7"	2 1/2	3	1'-6"	1'-6"	4'-0"	2519
22 1/2	22500	55	3 1/2	7'-9"	7'-1"	2 1/2	3	1'-6"	1'-6"	4'-0"	2584
25	25000	61	4	8'-0"	7'-6"	3	4	1'-6"	1'-6"	4'-0"	2979
30	30000	72	4 1/2	9'-0"	8'-0"	3	4	1'-6"	1'-6"	4'-0"	3120
35	35000	83	6	10'-4"	8'-0"	3 1/2	5	1'-6"	1'-6"	4'-0"	3344
40	40000	93	6	11'-6"	8'-0"	3 1/2	5	1'-6"	1'-6"	4'-0"	3476
45	45000	105	6	11'-6"	9'-2"	3 1/2	5	1'-6"	1'-6"	4'-0"	3926
50	50000	116	7 1/2	11'-6"	10'-2"	4	5	1'-6"	1'-6"	4'-0"	4229
55	55000	127	7 1/2	12'-0"	10'-6"	4	5	1'-6"	1'-6"	4'-0"	4438
60	60000	138	7 1/2	12'-0"	11'-5"	4	5	1'-6"	1'-6"	4'-0"	4647
65	65000	150	10	12'-6"	12'-0"	5	6	2'-0"	1'-6"	4'-0"	5194
70	70000	161	10	13'-0"	12'-5"	5	6	2'-0"	1'-6"	4'-0"	5515
75	75000	172	10	13'-0"	13'-3"	5	6	2'-0"	1'-6"	4'-0"	5801
80	80000	183	10	13'-0"	14'-0"	5	6	2'-0"	1'-6"	4'-0"	6208
85	85000	194	10	13'-0"	14'-10"	5	6	2'-0"	1'-6"	4'-0"	6343
90	90000	205	10	13'-0"	15'-4"	5	6	2'-0"	1'-6"	4'-0"	6506
95	95000	216	10	13'-0"	16'-9"	5	6	2'-0"	1'-6"	4'-0"	6707
100	100000	227	10	13'-0"	17'-6"	5	6	2'-0"	1'-6"	4'-0"	6851
125	125000	283	15	13'-0"	21'-9"	6	7	2'-0"	1'-6"	4'-0"	8745
150	150000	339	15	13'-0"	26'-0"	6	7	2'-0"	1'-6"	4'-0"	9297
175	175000	394	15	13'-0"	30'-4"	6	7	2'-0"	1'-6"	4'-0"	10525

NOTE.—Dimensions A and B are only given as a guide. These dimensions can be changed to suit the conditions.

We do not carry any Air Purifiers in stock. All apparatus is built to order to suit the locations and conditions.

Horsepowers shown above are 30% in excess of requirements.

"A.E.C." SYSTEMS

Continued on next page

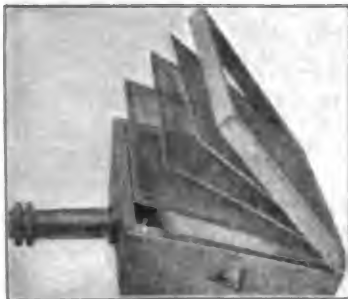
SPECIFICATIONS FOR "KINEALY" AIR PURIFIER AND HUMIDIFIER—The contractor shall furnish and erect complete and in running order one "Kinealy" Air Purifier and Humidifier. This purifier must be designed to properly clean and purify . . . cubic feet of air per minute. It shall be installed complete and ready for operation and shall include an eliminator, automatic spray heads, automatic flushing and cleaning device, motor-driven centrifugal pump, proper piping from the pump to the washer, waste, and overflow.

WASHER—The washer shall have the sides and tops of No. 16 galvanized iron, braced with two-inch angles. It shall be supplied with the proper number of "Kinealy" Automatic Spray Heads, placed and arranged so as to spray and mix with the air a sufficient amount of water to properly clean the air and to cool it in summer time.

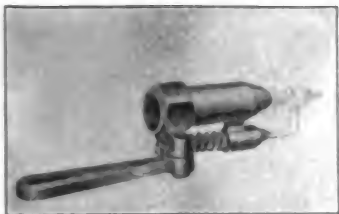
The housing shall have double jacket so that no water will impinge on the outside housing.

AUTOMATIC CLEANING DEVICE—This apparatus must be supplied with a "Kinealy Patent" Automatic Flushing and Cleaning Device for automatically cleaning all of the spray heads of this apparatus at one and the same time. The power used for operating this automatic device must be the water used in the spray heads themselves and must automatically flush and clean these spray heads at least once a minute by forcing the disc away from the head, and the form of spray must not be changed by such operation.

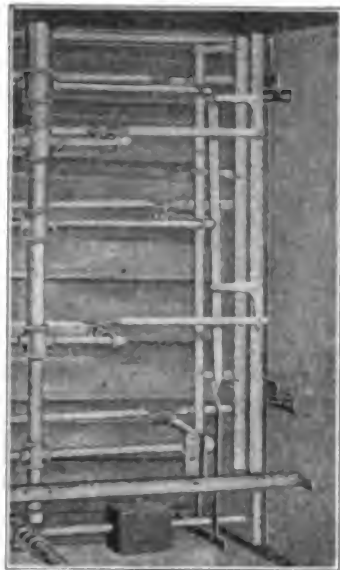
This automatic cleaning device must be supplied with motor and hammer for cleaning spray heads, as designed for this purpose.



INSIDE STRAINER KINEALY AIR PURIFIER



KINEALY SPRAY HEAD IN OPERATION



DETAIL OF KINEALY AUTOMATIC CLEANING DEVICE

ELIMINATOR—The eliminator shall have sides and top made of No. 16 galvanized iron, and it shall be provided with horizontal baffle plates, made of No. 20 galvanized iron, by which the air will be alternately deflected downward and upward, and the up-deflecting plates are to have gutter at the lower edge to carry off the water.

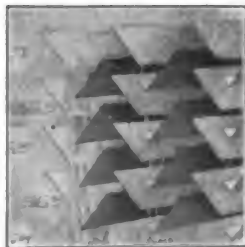
The first two rows of plates shall not have gutters.

SUCTION STRAINER—Furnish inside of settling tank a strainer, made of galvanized iron, containing an area 40 times the area of the pump suction and to have three removable brass screens; also furnish and place in position in main suction line to pump one cast-iron pot strainer, properly valved, with proper number of openings in same for proper drainage.

Cover to be removable for easy access to screens. All screens shall be solid brass, No. 20 mesh.

CENTRIFUGAL PUMP—Furnish and erect on concrete foundation one centrifugal pump of the proper size for pumping water for spraying purposes. This pump shall be direct-connected to a . . . volt direct current motor of proper size for operating this pump at the required number of revolutions.

"A.E.C." SYSTEMS



ELIMINATOR PLATES

AUTOMATIC SPRAY HEADS—All spray heads used on this apparatus shall be made of solid brass, spring lever adjustment of the automatic cleaning type, "Kinealy" patent with forward removable disc and shall be arranged in such manner over the entire surface of the washer chamber as to fill the entire chamber with a solid mist and spray effect of water, and shall be staggered in such manner as to have two complete sheets of water. All spray heads must be properly connected to the automatic cleaning device hereinbefore specified.

HUMIDITY CONTROL DEVICE—The contractor shall furnish and equip this apparatus with the necessary equipment for controlling the humidity of the rooms supplied with air from this apparatus, and shall fulfill the guarantee clause in this specification.

PIPING—The piping connecting the centrifugal pump to the washer is to be standard-weight galvanized iron pipe. A fresh-water connection with automatic cut-off is to be run to the pump, and a properly valved overflow and flushout pipe from the pump to the sewer. The suction pipe of the pump is to be provided with a strainer to prevent dirt from entering the piping. Strainer shall have an area 40 times the area of pump suction.

SETTLING TANK—A settling tank of the full width of the washer, of the proper length and depth, made of concrete, as indicated on drawings, is to be placed underneath washer.

PAINTING—The entire housing, eliminator and tank to be painted two coats of lead-and-oil paint.

GARANTEE—This apparatus shall be guaranteed to remove 98 per cent. of all dirt and dust from the air, and in summer time, when the humidity of the air supplied to the apparatus does not exceed 75 and the temperature is greater than 80 degrees, the apparatus shall be capable of reducing the temperature of the air leaving the eliminator to the extent of not less than 5 degrees.

And when the outside temperature is 50 degrees or lower, this apparatus shall be capable of maintaining a constant relative humidity of 50 per cent. in rooms supplied with air from this apparatus.

"KINEALY" THERMAL-VALVE — Designed for "Kinealy" Vacuum and Vapor Heating Systems, but used on pressure systems and all types of steam apparatus. When installed on radiators, it discharges all the air and water of condensation from the radiator into the return pipe at all times and under all conditions, but it allows no steam from the radiator to enter the return pipe.

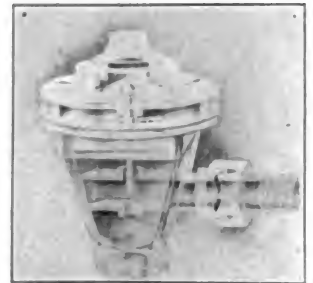
Noiseless in operation, as it has no floats or cups of any kind, and does not require any jet water, but depends upon heat alone for its motive power.

"Kinealy" Thermal-Valve is guaranteed to permit escape of water and air on any pressure from vacuum to 25 lbs. above atmosphere without readjusting.

PRICES—Furnished on application.

"KAUFFMAN" DUSTLESS RADIATOR SHIELD—As shown; is designed for all styles and sizes of radiators and made of charcoal iron with c. i. brackets, bronzed or painted as desired, brass tops with c. i. brackets and galvanized iron backs, solid brass shield with c. i. electroplated or solid brass brackets, or all solid nickel-plated shields.

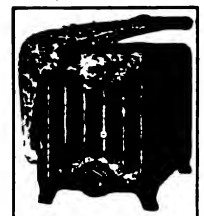
PRICES—On application.



THERMAL-VALVE



RADIATOR SHIELD
Full Length Pattern



RADIATOR SHIELD
Window Pattern

H. B. Smith Co.

Manufacturers of Boilers and Radiators

WESTFIELD, MASS.

138 Washington Street, North
 BOSTON

39 East Houston Street
 NEW YORK

1225 Arch Street
 PHILADELPHIA

PRODUCTS—"MENLO" BOILERS; "MILLS" WATER-TUBE BOILERS; "MERCER" RETURN-FLUE BOILERS; "PRINCESS"; "IMPERIAL," AND "X-RAY" DIRECT RADIATORS; "AERIAL," "GOLD PIN," AND "SCHOOL PIN" INDIRECT RADIATORS; BRECKENRIDGE AUTOMATIC AIR VALVES



"MENLO" STEAM BOILER
 —NOS. 16, 18 AND 20

DESCRIPTION—The "Menlo" Boiler is built both for steam and water warming. It is designed to yield the highest efficiency possible for boilers of this size and type.

The "Mills" Boiler is of circular cast-tube construction; tubes being vertical, they are *enveloped* by the flames. Draft distributors give maximum heat absorption and economy in coal. Each section is a separate boiler, no joints are exposed to fire; there is no leaking.

The "Mercer" Boiler is of the Sectional Cast-Iron Horizontal Return-flue type and is made for steam and water warming.

BOILER RATING

Basis for Computing Size of Boilers

1. **STEAM BOILER** ratings are based on maintaining two pounds pressure at the boiler.
2. **WATER BOILER** ratings are based on the water being maintained at a temperature of 180 degrees at the boiler.
3. **SUFFICIENT RADIATION** must be installed to easily raise and maintain a temperature of 70 degrees.

4. **RATINGS** are for cast-iron **DIRECT** radiators with average amount of surface in **MAINS, RISERS** and **RETURNS**.
5. **Usual ALLOWANCE** must be made for the use of **PIPE COILS, WALL RADIATORS, DIRECT-INDIRECT, INDIRECT RADIATION** and **CONTINGENCIES**.
 - (a) **PIPE COILS OR WALL RADIATORS.** Each foot of surface is considered equivalent to 1 1/4 feet of direct radiators.
 - (b) **DIRECT-INDIRECT RADIATORS.** Each foot of surface is considered equivalent to 1 1/3 feet of direct radiators.
 - (c) **INDIRECT RADIATORS.** Each foot of surface is considered equivalent to 1 1/2 feet of direct radiators.
 - (d) **COIL or WATER BACK** for warming water (domestic supply). Each gallon storage capacity is considered equivalent to 2 feet of direct steam radiators, or 3 feet of direct water radiators.
6. **ALL PIPING** (supplies, returns, risers, etc.) is to be figured as radiating surface.
 - (a) Under **USUAL CONDITIONS** an allowance for **PIPING** and **FACTOR OF SAFETY** is considered equal to approximately 50% of the **NET** amount of **DIRECT** radiators (see paragraph 5).
7. **LISTED RATINGS** of boilers are determined by adding 50% to the **NET** amount of **DIRECT** cast-iron **RADIATORS** exclusive of **PIPING** (see paragraph 5).
 - (a) The above 50% addition is equivalent to a deduction of 33 1/3% from listed ratings.
8. **RATINGS** are based on **ANTHRACITE COAL** as fuel.
 - (a) If **BITUMINOUS COAL** is to be used it is good practice to add about 10% to size of Boiler.



"MENLO" BOILER—NOS.
 123 AND 126

MENLO BOILERS

DIMENSIONS IN INCHES; RATINGS IN FEET; PRICES

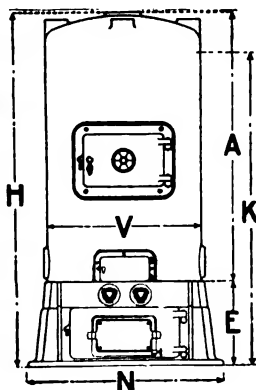
Number	10	12	*14	†14	16	18	20
A Height of Dome.....	24	25 1/2	27	33	38	38	39
E Height of Ash Pit.....	8	8	8	12	12	12	12
H Total Height.....	32	33 1/2	35	45	50	50	51
K Height of Water Line.....				39 1/2	44	44	45
M Length at Floor.....	19 1/2	22	24 1/2	25	26 1/2	28 1/2	30 1/2
N Width at Floor.....	19 1/2	22	24 1/2	24 1/2	26 1/2	28 1/2	30 1/2
V Diameter of Dome.....	15	17 1/2	20	20	22	24	26
X Diam. of Smoke Pipe.....	5	5	6	6	7	7	8
Y Height to Center of Smoke Pipe Openings.....	25	26	27	31 1/2	37 1/2	37 1/2	38 1/2
Diam of Grate.....	10	12	14	14	16	18	20
Rating, Steam.....				225	300	375	475
Rating, Water.....	200	300	400		500	600	800
Price, Steam.....	\$58	\$75		\$114	\$149	\$180	\$216
Price, Water.....	\$58	\$70	\$95		\$139	\$170	\$206

*Sizes of Water only. †Sizes of Steam only.

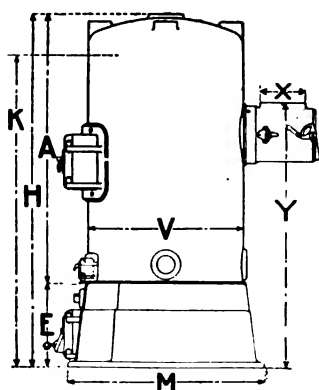
Number	23	123	26	126
B Height of Fire Pot.....	25	25	26	26
C Height of Intermediate Section.....		6		6
D Height of Dome.....	12	12	12	12
E Height of Ash Pit.....	14	14	14	14
F Height of Smoke Bonnet.....	11	11	11	11
H Total Height of Boiler.....	62	68	63	69
K Height of Water Line.....	45	51	46	52
M Length at Floor.....	35 1/2	35 1/2	38 1/2	38 1/2
N Width at Floor.....	33 1/2	33 1/2	37	37
V Outside Diameter of Fire Pot.....	28	28	31	31
X Diameter of Smoke Pipe.....	8	8	8	8
Y Height to Center of Smoke Pipe.....	57 1/2	63 1/2	58 1/2	64 1/2
Diameter of Grate.....	23	23	26	26
Rating (in Feet), Water.....	900	1000	1125	1250
Rating (in Feet), Steam.....	550	600	675	750
Price, Water Boilers.....	\$226	\$239	\$283	\$306
Price, Steam Boilers.....	\$236	\$249	\$293	\$316



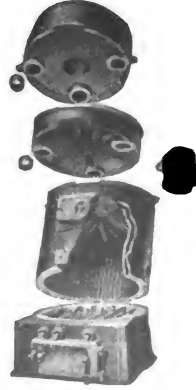
NOS. 16, 18 AND 20
 INTERIOR



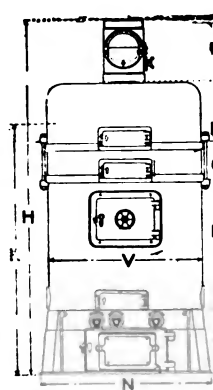
NOS. 14, 16, 18 AND 20
 FRONT ELEVATION



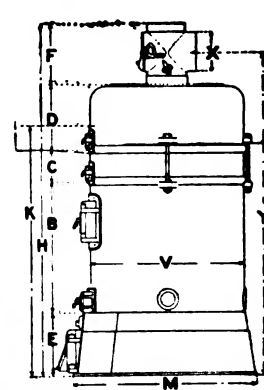
NOS. 14, 16, 18 AND 20
 SIDE ELEVATION



NOS. 123 AND 126
 INTERIOR



NOS. 123 AND 126
 FRONT ELEVATION



NOS. 123 AND 126
 SIDE ELEVATION

"A.B.C." SYSTEMS

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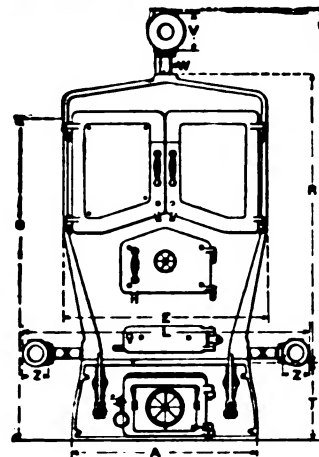
NO. 24 MILLS WATER TUBE BOILER
TESTED TO 126 LBS. WATER PRESSURE



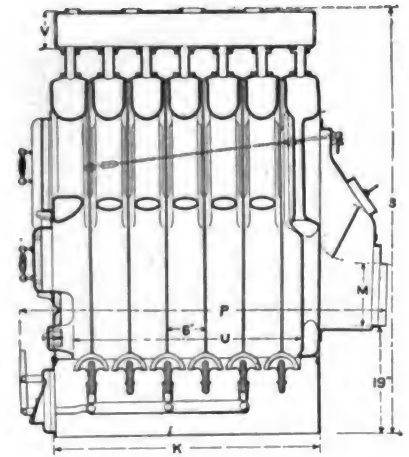
STEAM BOILER



INTERIOR



FRONT



LONGITUDINAL SECTION

Sections	Fire Surface, Square Ft.	Rating in Ft.		Price		Length of Grate Bar, Inches	Size of Firepot, Inches	A	E	K	L		M	O	P	R	S	T	U	V	W	X	Z	
		Steam	Water	Steam	Water						Width of Boiler												Return Drum, Outside Diameter	
											Steam, Inches	Water, Inches												Steam, Inches
8	75.5	900	1500	887	886	20	24x24	20	32	32	45	48	9	47	48	44	66	12	24	6	14x24	14x26	44	6
9	91.5	1125	1875	888	888	20	24x30	20	32	38	45	48	9	47	54	44	66	12	30	6	14x24	14x26	44	6
10	106.5	1350	2250	898	898	20	24x36	20	32	44	45	48	10	47	60	44	66	12	36	6	14x24	14x26	44	6
11	122.5	1575	2600	871	861	20	24x42	20	32	50	45	48	10	47	66	44	66	12	42	6	14x24	14x26	44	6
12	137.5	1800	2975	866	856	20	24x48	20	32	56	45	48	12	47	72	44	66	12	48	6	14x24	14x26	44	6
13	153.5	2025	3350	797	797	20	24x54	20	32	62	45	48	12	47	78	44	66	12	54	6	14x24	14x26	44	6

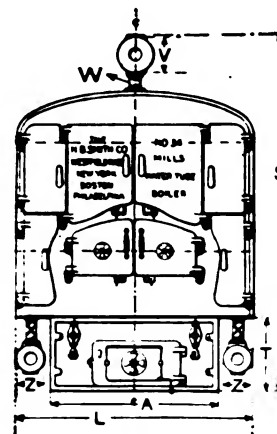
NO. 34 MILLS WATER TUBE BOILER
TESTED TO 126 LBS. WATER PRESSURE



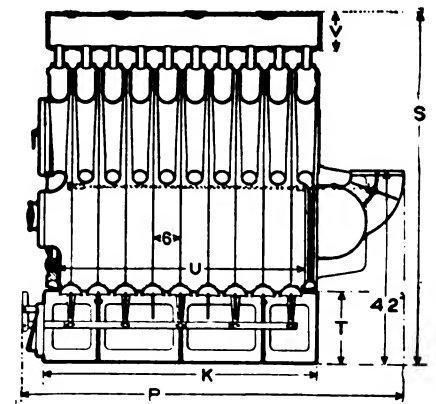
STEAM BOILER



INTERIOR



FRONT



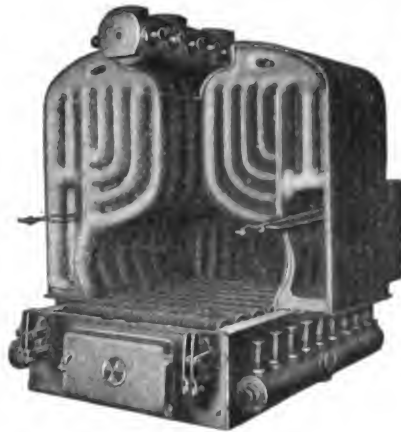
LONGITUDINAL SECTION

Sections	Fire Surface, Square Ft.	Rating in Ft.		Price		Size of Fire Pot, Inches	Length of Grate Bar, Inches	Smoke Pipe Opening Size—Inches		Sections	A	K	L	O	P	S	T	U	V	W	X	Z	
		Steam	Water	Steam	Water			Oval,	Round,		Width at Foundation, Inches	Length of Foundation, Inches	Width of Boiler, Inches	Height of Water Line, Inches	Length of Boiler, Inches	Height of Boiler, Inches	Height of Ash Pit, Inches	Length of Fire Pot, Inches	Supply Drum, Outside Diameter, Inches	Supply Drum Nipples, Inches	Return Drum Nipples, Inches	Return Drum, Outside Diameter	
																						Steam, Inches	Water, Inches
8	165.0	2000	3300	\$700	\$690	34x50	28	10x14	12	8	36	37	51	54	60	78	16	30	8	24x4	14x7	44	6
9	192.5	2400	3950	809	789	34x56	28	10x14	12	9	36	43	51	54	66	78	16	36	8	24x4	14x7	44	6
10	220.0	2800	4625	902	882	34x62	28	10x14	12	10	36	49	51	54	72	78	16	42	8	24x4	14x7	44	6
11	247.5	3200	5275	982	962	34x68	28	10x18	14	11	36	55	51	54	78	78	16	48	8	24x4	14x7	44	6
12	275.0	3600	5950	1062	1042	34x74	28	10x18	14	12	36	61	51	54	84	78	16	54	8	24x4	14x7	44	6
13	302.5	4000	6600	1142	1122	34x80	28	10x18	14	13	36	67	51	54	90	78	16	60	8	24x4	14x7	44	6
14	330.0	4400	7250	1222	1202	34x86	28	12x20	16	14	36	73	51	54	96	78	16	66	8	24x4	14x7	44	6
15	357.5	4800	7925	1302	1282	34x92	28	12x20	16	15	36	79	51	54	102	78	16	72	8	24x4	14x7	44	6
16	385.0	5200	8575	1382	1362	34x98	28	12x20	16	16	36	85	51	54	108	78	16	78	8	24x4	14x7	44	6

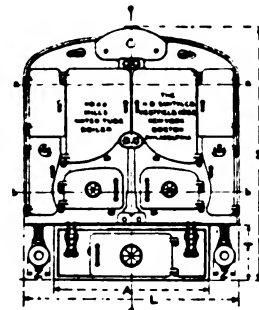
NO. 44 MILLS WATER TUBE BOILER
TESTED TO 125 LBS. WATER PRESSURE



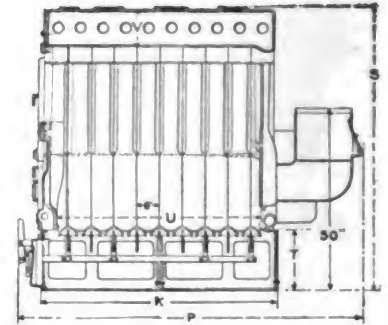
STEAM BOILER



INTERIOR



FRONT



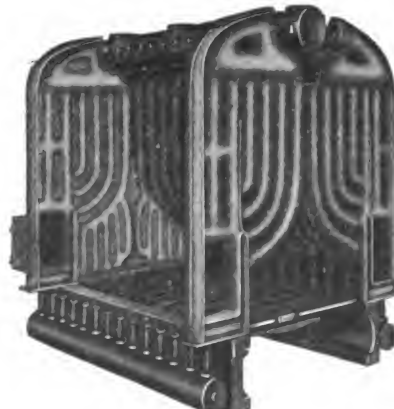
LONGITUDINAL SECTION

Sections	Rating in Ft.		Fire Surface, Square Ft.	Price		Size of Fire Pot, Inches	Length of Grate Bar, Inches	Smoke Pipe Opening, Size—Inches		Sections	A	K	L	O	P	S	T	U	V	W	X	Z	
	Steam	Water		Steam	Water			Oval	Round		Width at Foundation, Inches	Length at Foundation, Inches	Width of Boiler, Inches	Height of Water Line, Inches	Length of Boiler, Inches	Height of Boiler, Inches	Height of Ash Pit, Inches	Length of Fire Pot, Inches	Supply Drum, Outside Diameter, Inches	Supply Drum Nipples, Inches	Return Drum Nipples, Inches	Return Drums Outside Diameter	
																						Steam, Inches	Water, Inches
7	3600	5950	287	\$1082	\$1042	44x36	38	13x16	= 15	7	46	43	64	58	72	75	16	36	10	2x4	2x7	6	8
8	4200	6925	328	1182	1162	44x42	38	13x16	= 15	8	46	49	64	58	78	75	16	42	10	2x4	2x7	6	8
9	4800	7925	369	1302	1282	44x48	38	13x16	= 15	9	46	53	64	58	82	75	16	48	10	2x4	2x7	6	8
10	5400	8900	410	1422	1402	44x54	38	13x22	= 18	10	46	61	64	58	90	75	16	54	10	2x4	2x7	6	8
11	6000	9900	451	1542	1522	44x60	38	13x22	= 18	11	46	67	64	58	96	75	16	60	10	2x4	2x7	6	8
12	6600	10900	492	1662	1642	44x66	38	13x22	= 18	12	46	73	64	58	102	75	16	66	10	2x4	2x7	6	8
13	7200	11875	533	1782	1762	44x72	38	15x24	= 20	13	46	79	64	58	108	75	16	72	10	2x4	2x7	6	8
14	7800	12875	574	1902	1882	44x78	38	15x24	= 20	14	46	85	64	58	114	75	16	78	10	2x4	2x7	6	8
15	8400	13850	615	2022	2002	44x84	38	15x24	= 20	15	46	91	64	58	120	75	16	84	10	2x4	2x7	6	8
16	9000	14850	656	2142	2122	44x90	38	15x24	= 20	16	46	97	64	58	126	75	16	90	10	2x4	2x7	6	8

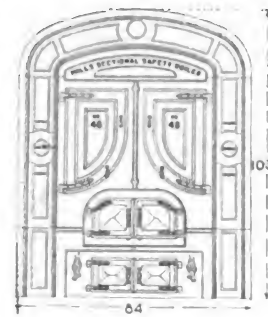
NO. 48 MILLS WATER TUBE BOILER
TESTED TO 200 LBS. WATER PRESSURE



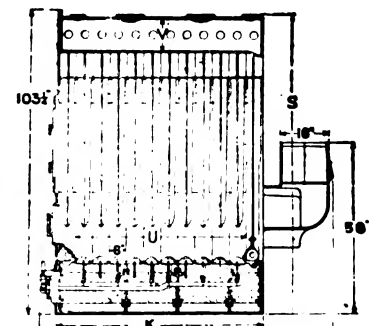
STEAM BOILER



INTERIOR



FRONT



LONGITUDINAL SECTION

Sections	Rating in Ft.		Fire Surface, Square Ft.	Price		Size of Fire Pot, Inches	Length of Grate Bar, Inches	Smoke Pipe Opening, Size—Inches		Sections	A	K	L	O	P	S	T	U	V	W	X	Z
	Steam	Water		Steam	Water			Oval	Round		Width of Ash Pit, Inches	Length at Foundation, Inches	Width of Twin Sections, Inches	Height of Water Lines, Inches	Length of Boiler, Inches	Height of Boiler, Inches	Height of Ash Pit, Inches	Length of Fire Pot, Inches	Supply Drum, Outside Diameter, Inches	Supply Drum Nipples, Inches	Return Drum Nipples, Inches	Return Drums, Outside Diameter, Inches
7	4800	7925	360	\$1302	\$1252	48x30	48	.....	16	7	60	43	82	84	74	102	18	30	12	2x6	2x9	8
8	5600	9250	420	1462	1412	48x36	48	.....	16	8	60	49	82	84	80	102	18	36	12	2x6	2x9	8
9	6400	10550	480	1622	1572	48x42	48	.....	16	9	60	55	82	84	86	102	18	42	12	2x6	2x9	8
10	7200	11875	540	1782	1732	48x48	48	.....	16	10	60	61	82	84	92	102	18	48	12	2x6	2x9	8
11	8000	13200	600	1942	1892	48x54	48	16x23	20	11	60	67	82	84	94	102	18	54	12	2x6	2x9	8
12	8800	14525	660	2102	2052	48x60	48	16x23	20	12	60	73	82	84	104	102	18	60	12	2x6	2x9	8
13	9600	15850	720	2262	2212	48x66	48	16x23	20	13	60	79	82	84	110	102	18	66	12	2x6	2x9	8
14	10400	17150	780	2422	2372	48x72	48	16x23	20	14	60	85	82	84	116	102	18	72	12	2x6	2x9	8
15	11200	18475	840	2582	2532	48x78	48	16x23	20	15	60	91	82	84	122	102	18	78	12	2x6	2x9	8
16	12000	19800	900	2742	2692	48x84	48	16x31	24	16	60	97	82	84	128	102	18	84	12	2x6	2x9	8
17	.....	.....	.....	.....	.....	48x72	48	16x31	24	17	60	103	82	84	134	102	18	90	12	2x6	2x9	8
18	.....	.....	.....	.....	.....	48x78	48	16x31	24	18	60	109	82	84	140	102	18	96	12	2x6	2x9	8
19	.....	.....	.....	.....	.....	48x84	48	16x31	24	19	60	115	82	84	146	102	18	102	12	2x6	2x9	8
20	.....	.....	.....	.....	.....	48x84	48	16x31	24	20	60	121	82	84	152	102	18	108	12	2x6	2x9	8

MERCER RETURN FLUE BOILER



NOS. 27 AND 36—"MERCER" STEAM BOILER



"REED" GRATE
Used in all Mercer and Mills Boilers

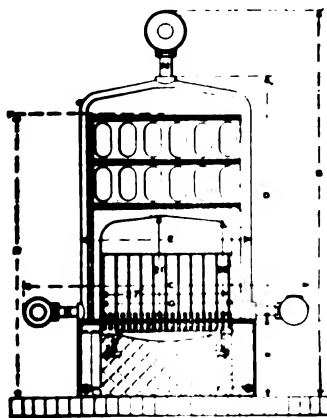


INTERIOR

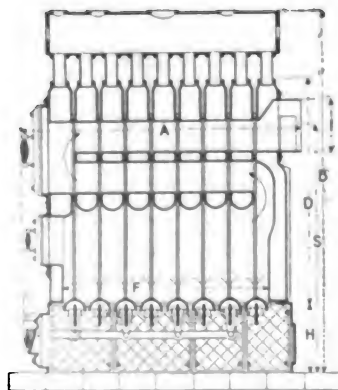
MERCER BOILERS

MERCER BOILER	Sections	Rating in Ft		Price		Fire Surface, Square Feet	Supply Drum Outside Diameter, Inches	Steam Boiler Outside Diameter, Inches	Water Boiler Outside Diameter, Inches	A	B	C		D	E	F		G	H	I	K	N	R	S	Sections
		Steam	Water	Steam	Water							Total Width	Length of Fire Pot in Inches												
													Steam, Inches			Water, Inches	Grate, Full Size									Grate, Reduced *
No. 18	4	425	700	3237	3217	54	6	4	4	34	69	45	45	45	27	18	18	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	4
	5	575	950	3773	3753	66	6	4	4	40	69	45	45	45	27	24	24	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	5
	6	700	1150	3999	3979	78	6	4	4	46	69	45	45	45	27	30	30	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	6
	7	875	1450	3853	3833	90	6	4	4	52	69	45	45	45	27	36	36	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	7
	8	1050	1750	4113	4093	102	6	4	4	58	69	45	45	45	27	42	42	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	8
	9	1225	2025	4373	4353	114	6	4	4	64	69	45	45	45	27	48	48	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	9
	10	1325	2200	4593	4573	126	6	4	4	70	69	45	45	45	27	54	48	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	10
	11	1425	2350	4813	4793	138	6	4	4	76	69	45	45	45	27	60	54	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	11
	12	1525	2500	5033	5013	150	6	4	4	82	69	45	45	45	27	66	54	18	12	9	1 1/2 x 6	1 1/2 x 6	51	48	12
No. 27	6	1300	2150	5499	5479	117	8	4	6	46	80	57	60	50	37	30	30	27	16	12	1 1/2 x 6	2 x 6	57	55	6
	7	1575	2600	5713	5693	135	8	4	6	52	80	57	60	50	37	36	36	27	16	12	1 1/2 x 6	2 x 6	57	55	7
	8	1850	3050	5927	5907	153	8	4	6	58	80	57	60	50	37	42	42	27	16	12	1 1/2 x 6	2 x 6	57	55	8
	9	2125	3500	6141	6121	171	8	4	6	64	80	57	60	50	37	48	48	27	16	12	1 1/2 x 6	2 x 6	57	55	9
	10	2400	3950	6355	6335	189	8	4	6	70	80	57	60	50	37	54	54	27	16	12	1 1/2 x 6	2 x 6	57	55	10
	11	2675	4400	6569	6549	207	8	4	6	76	80	57	60	50	37	60	54	27	16	12	1 1/2 x 6	2 x 6	57	55	11
	12	2950	4850	6783	6763	225	8	4	6	82	80	57	60	50	37	66	54	27	16	12	1 1/2 x 6	2 x 6	57	55	12
	13	3225	5300	6997	6977	243	8	4	6	88	80	57	60	50	37	72	60	27	16	12	1 1/2 x 6	2 x 6	57	55	13
	14	3500	5750	7211	7191	261	8	4	6	94	80	57	60	50	37	78	60	27	16	12	1 1/2 x 6	2 x 6	57	55	14
	15	3775	6250	7425	7405	279	8	4	6	100	80	57	60	50	37	84	66	27	16	12	1 1/2 x 6	2 x 6	57	55	15
	16	4050	6700	7639	7619	297	8	4	6	106	80	57	60	50	37	90	66	27	16	12	1 1/2 x 6	2 x 6	57	55	16
No. 36	7	2175	3575	5747	5727	180	10	6	8	52	83	67	70	52	48 1/2	36	36	36	16	14	2 x 6	2 1/2 x 6	59	57	7
	8	2550	4200	6473	6453	210	10	6	8	58	83	67	70	52	48 1/2	42	42	36	16	14	2 x 6	2 1/2 x 6	59	57	8
	9	2925	4825	7199	7179	240	10	6	8	64	83	67	70	52	48 1/2	48	48	36	16	14	2 x 6	2 1/2 x 6	59	57	9
	10	3300	5450	7925	7905	270	10	6	8	70	83	67	70	52	48 1/2	54	54	36	16	14	2 x 6	2 1/2 x 6	59	57	10
	11	3750	6200	8651	8631	300	10	6	8	76	83	67	70	52	48 1/2	60	60	36	16	14	2 x 6	2 1/2 x 6	59	57	11
	12	4200	6925	9377	9357	330	10	6	8	82	83	67	70	52	48 1/2	66	60	36	16	14	2 x 6	2 1/2 x 6	59	57	12
	13	4650	7675	10103	10083	360	10	6	8	88	83	67	70	52	48 1/2	72	60	36	16	14	2 x 6	2 1/2 x 6	59	57	13
	14	5100	8400	10829	10809	390	10	6	8	94	83	67	70	52	48 1/2	78	66	36	16	14	2 x 6	2 1/2 x 6	59	57	14
	15	5550	9150	11555	11535	420	10	6	8	100	83	67	70	52	48 1/2	84	66	36	16	14	2 x 6	2 1/2 x 6	59	57	15
	16	6000	9900	12281	12261	450	10	6	8	106	83	67	70	52	48 1/2	90	66	36	16	14	2 x 6	2 1/2 x 6	59	57	16

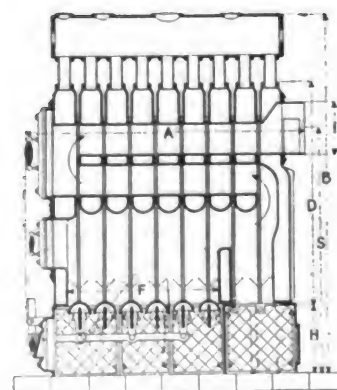
*Mercer Boilers are shipped with Fire Pots as given in this column, unless otherwise specified.



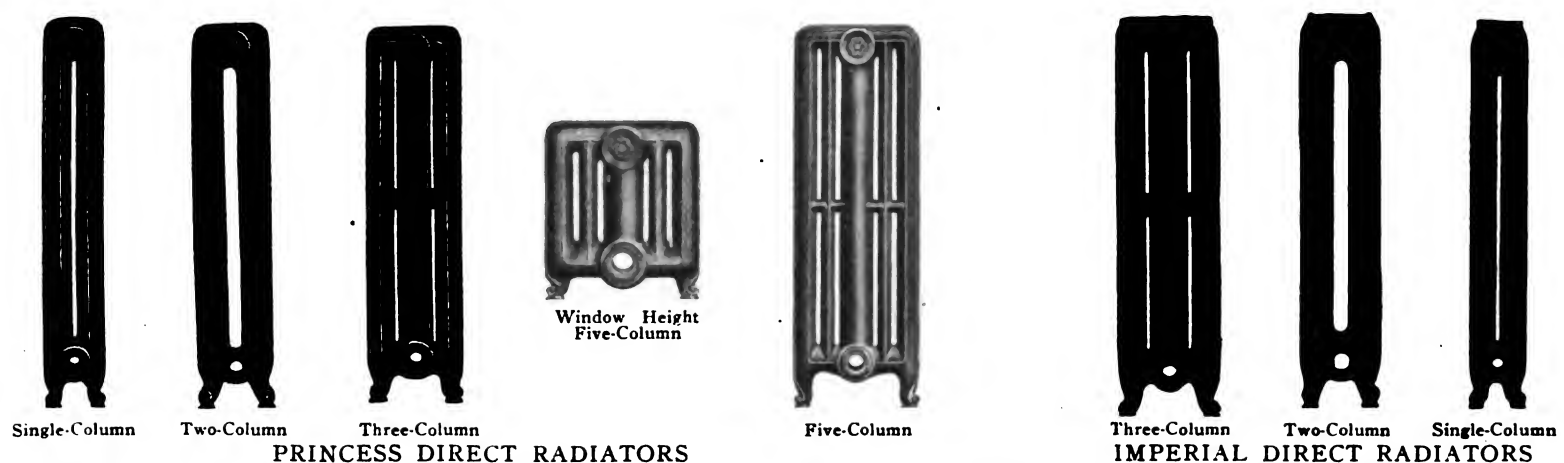
TRANSVERSE SECTION
"MERCER" BOILER



LONGITUDINAL SECTION
GRATE FULL SIZE



LONGITUDINAL SECTION
GRATE REDUCED



LIST OF SIZES SHOWING RADIATING SURFACE IN FEET OF DIRECT RADIATORS

PRINCESS AND IMPERIAL													PRINCESS AND IMPERIAL													PRINCESS ONLY				
Number of Sections	Single-Column						Two-Column						Number of Sections	Three-Column						Five-Column										
	Height	45"	37"	31"	25"	22"	19"	45"	37"	31"	25"	22"		19"	Height	45"	37"	31"	25"	22"	19"	37"	25"	Window Heights						
	Ft. per Section	4½	3½	3	2½	2½	2	5	4	3½	3	2½		2½	Feet per Section	8	6½	5½	4½	4	3½	10	7	16"	14"	12"				
	Total Length Ft. In.														Total Length Ft. In.															
3	0	10	13½	10½	9	7½	6½	6	15	12	10½	9	7½	6½	3	0	10½	24	19½	16½	13½	12	10½	30	21	14	12	10		
4	1	4	18	14	12	10	9	8	20	16	14	12	10	9	4	1	2	32	26	22	18	16	14	40	28	18½	16	14		
5	1	7	22½	17½	15	12½	11½	10	25	20	17½	15	13½	11½	5	1	5½	40	32½	27	22½	20	17½	50	35	23½	20	17½		
6	1	10	27	21	18	15	13½	12	30	24	21	18	15½	13½	6	1	8½	48	39	33	27	24	21	60	42	28	24	20		
7	1	1	31½	24½	21	17½	15½	14	35	28	24½	21	18½	15½	7	1	11½	56	45½	38½	31½	28	24½	70	49	32½	28	2½		
8	2	1	36	28	24	20	18	16	40	32	28	24	21	18	8	2	3	64	52	44	36	32	28	80	56	37½	32	26½		
9	2	4	40½	31½	27	22½	20½	18	45	36	31½	27	23½	20½	9	2	6½	72	58½	49½	40½	36	31½	90	63	42	36	30		
10	2	7	45	35	30	25	22½	20	50	40	35	30	26½	22½	10	2	9½	80	65	55	45	40	35	100	70	46	40	3½		
11	2	10	49½	38½	33	27½	24½	22	55	44	38½	33	28½	24½	11	3	12½	88	71½	60½	49½	44	38½	110	77	51	44	3½		
12	3	1	54	42	36	30	27	24	60	48	42	36	31	27	12	3	4	96	78	66	54	48	42	120	84	56	48	40		
13	3	4	58½	45½	39	32½	29½	26	65	52	45½	39	34½	29½	13	3	7½	104	84½	71½	58½	52	45½	130	91	60½	52	4½		
14	3	7	63	49	42	35	31½	28	70	56	49	42	36½	31½	14	3	10½	112	91	77	63	56	49	140	98	65½	56	4½		
15	3	10	67½	52½	45	37½	33½	30	75	60	52½	45	39½	33½	15	4	1½	120	97½	82½	67½	60	52½	150	105	70	60	50		
16	4	1	72	56	48	40	36	32	80	64	56	48	42	36	16	4	5	128	104	88	72	64	56	160	112	74	64	53½		
17	4	4	76½	59½	51	42½	38½	34	85	68	59½	51	44½	38½	17	4	8½	136	110½	93½	76½	68	59½	170	119	79½	68	56½		
18	4	7	81	63	54	45	40½	36	90	72	63	54	47½	40½	18	4	11½	144	117	99	81	72	63	180	126	84	72	60		
19	4	10	85½	66½	57	47½	42½	38	95	76	66½	57	49½	42½	19	5	2½	152	123½	104½	85½	76	66½	190	133	88½	76	63½		
20	5	1	90	70	60	50	45	40	100	80	70	60	52½	45	20	5	6	160	130	110	90	80	70	200	140	92½	80	66½		
21	5	4	94½	73½	63	52½	47½	42	105	84	73½	63	55½	47½	21	5	9½	168	136½	115½	94½	84	73½	210	147	98	84	70		
22	5	7	99	77	66	55	49½	44	110	88	77	66	57½	49½	22	6	12½	176	143	121	99	88	77	220	154	102½	88	73½		
23	5	10	103½	80½	69	57½	51½	46	115	92	80½	69	60½	51½	23	6	3½	184	149½	126½	103½	92	80½	230	161	107½	92	76½		
24	6	1	108	84	72	60	54	48	120	96	84	72	63	54	24	6	7	192	156	132	108	96	84	240	168	112	96	80		
25	6	4	112½	87½	75	62½	56½	50	125	100	87½	75	65½	56½	25	6	10½	200	162½	137½	112½	100	87½	250	175	116½	100	83½		
26	6	7	117	91	78	65	58½	52	130	104	91	78	68½	58½	26	7	1½	208	169	143	117	104	91	260	182	121½	104	86½		
27	6	10	121½	94½	81	67½	60½	54	135	108	94½	81	70½	60½	27	7	4½	216	175½	148½	121½	108	94½	270	189	126	108	90		
28	7	1	126	98	84	70	63	56	140	112	98	84	73	63	28	7	8	224	182	154	126	112	98	280	196	130½	112	93½		
29	7	4	130½	101½	87	72½	65½	58	145	116	101½	87	76½	65½	29	7	11½	232	188½	159½	130½	116	101½	290	203	135½	116	96½		
30	7	7	135	105	90	75	67½	60	150	120	105	90	78½	67½	30	8	2½	240	195	165	135	120	105	300	210	140	120	100		



THREE-COLUMN "PRINCESS" DIRECT RADIATORS

DIRECT RADIATORS
PRINCESS AND IMPERIAL
REGULAR TAPPING*

STEAM TWO-PIPE WORK

Radiators will be tapped for two-pipe work unless otherwise specified

	Inches
Radiators of 50 feet and smaller.....	1 x ¾
Radiators larger than 50 feet and smaller than 120 feet.....	1 ¼ x 1
Radiators of 120 feet and larger.....	1 ½ x 1 ¼
Air Valve.....	¾

ONE-PIPE WORK

Radiators of 30 feet and smaller.....	1
Radiators larger than 30 feet and smaller than 60 feet.....	1 ¼
Radiators of 60 feet and larger, and smaller than 120 feet.....	1 ½
Radiators of 120 feet and larger.....	2
Air Valve.....	1 ½

WATER

Radiators of 50 feet and smaller.....	1 x 1
Radiators larger than 50 feet and smaller than 120 feet.....	1 ¼ x 1 ¼
Radiators of 120 feet and larger.....	1 ½ x 1 ½
Air Valve.....	¾ at top

SPECIAL NOTICE

If Radiators are required tapped top and bottom same end, or top and bottom opposite ends, so specify on order. All tappings will be made RIGHT HAND unless otherwise specified.

*Tappings other than Regular can be made SPECIAL to order.

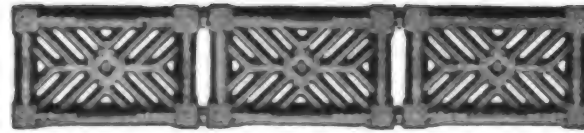


SINGLE-COLUMN "IMPERIAL" DIRECT RADIATORS

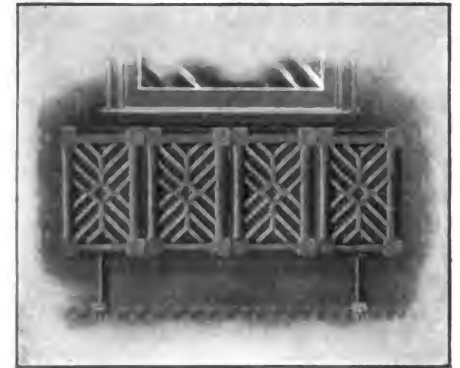
X-RAY WALL RADIATORS, DIRECT



1 x 3-5 FOOT RADIATOR



1 x 3-8 FOOT HORIZONTAL



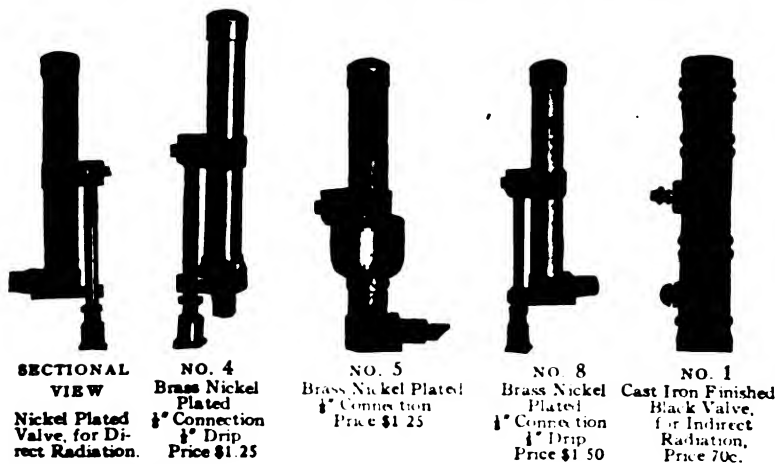
1 x 4-8 FOOT VERTICAL

DIMENSIONS AND RADIATING SURFACE

Number of Sections	5-Foot X-Ray 5 Feet Per Section.		8-Foot X-Ray Vertical 8 Feet Per Section.		8-Foot X-Ray Horizontal 8 Feet Per Section.	
	Feet of Surface	Length Feet Inches	Feet of Surface	Length Feet Inches	Feet of Surface	Length Feet Inches
1x1	8	1-2 1/4	8	1-2 1/4	8	1-9 1/4
1x2	16	2-5 1/4	16	2-5 1/4	16	3-8 1/4
1x3	24	3-8 1/4	24	3-8 1/4	24	5-6 1/4
1x4	32	4-11 1/4	32	4-11 1/4	32	7-5 1/4
1x5	40	6-2 1/4	40	6-2 1/4	40	9-3 1/4
1x6	48	7-5 1/4	48	7-5 1/4	48	11-2 1/4
1x7	56	8-8 1/4	56	8-8 1/4	56	13-1 1/4
1x8	64	9-11 1/4	64	9-11 1/4	64	14-11 1/4
	Height 1' 2 1/4"		Height 1' 9 1/4"		Height 1' 2 1/4"	
2x1	16	1-2 1/4	16	1-2 1/4	16	1-9 1/4
2x2	32	2-5 1/4	32	2-5 1/4	32	3-8 1/4
2x3	48	3-8 1/4	48	3-8 1/4	48	5-6 1/4
2x4	64	4-11 1/4	64	4-11 1/4	64	7-5 1/4
2x5	80	6-2 1/4	80	6-2 1/4	80	9-3 1/4
2x6	96	7-5 1/4	96	7-5 1/4	96	11-2 1/4
2x7	112	8-8 1/4	112	8-8 1/4	112	13-1 1/4
2x8	128	9-11 1/4	128	9-11 1/4	128	14-11 1/4
	Height 2' 5 1/4"		Height 3' 8 1/4"		Height 2' 5 1/4"	
3x1	24	1-2 1/4	24	1-2 1/4	24	1-9 1/4
3x2	48	2-5 1/4	48	2-5 1/4	48	3-8 1/4
3x3	72	3-8 1/4	72	3-8 1/4	72	5-6 1/4
3x4	96	4-11 1/4	96	4-11 1/4	96	7-5 1/4
3x5	120	6-2 1/4	120	6-2 1/4	120	9-3 1/4
3x6	144	7-5 1/4	144	7-5 1/4	144	11-2 1/4
3x7	168	8-8 1/4	168	8-8 1/4	168	13-1 1/4
3x8	192	9-11 1/4	192	9-11 1/4	192	14-11 1/4
	Height 3' 8 1/4"		Height 5' 6 1/4"		Height 3' 8 1/4"	

Total width of section, 11 1/4".

BRECKENRIDGE AUTOMATIC AIR VALVES



SECTIONAL VIEW
Nickel Plated Valve, for Direct Radiation.

NO. 4
Brass Nickel Plated
1/2" Connection
1/2" Drip
Price \$1.25

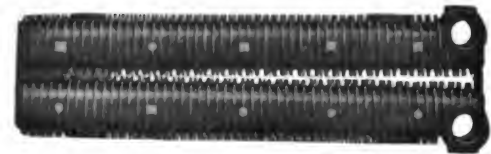
NO. 5
Brass Nickel Plated
1/2" Connection
Price \$1.25

NO. 8
Brass Nickel Plated
1/2" Connection
1/2" Drip
Price \$1.50

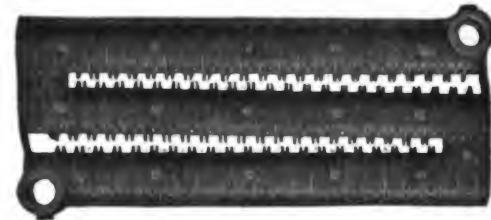
NO. 1
Cast Iron Finished
Black Valve, for Indirect Radiation.
Price 70c.

"A.E.C." SYSTEMS

INDIRECT RADIATORS



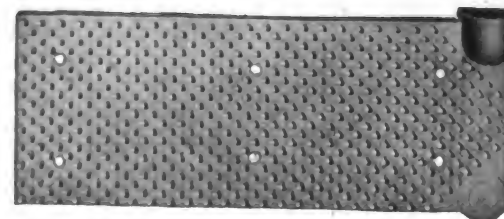
15-FOOT HORIZONTAL "AERIAL"



20-FOOT HORIZONTAL "AERIAL"



12-FT. R. AND L. NIPPLE "GOLD PIN"
INTERMEDIATE SECTION



SUPPLY AND RETURN END SECTION, 20-FT. "SCHOOL PIN"
DIMENSIONS INDIRECT RADIATORS IN INCHES

RADIATOR	Feet per Section	Length	Height	Center to Center of Section, Inches	R. & L. Nipple	Supply Tapping	Return Tapping
Horizontal Aerial...	15	37	9 1/4	3 1/2	2	2	2
Horizontal Aerial...	20	36 1/2	14 1/4	3 1/2	2	2	2
Vertical Aerial...	12 1/2	8 1/2	30	4 1/2	3	3	3
Vertical Aerial...	15	8 1/2	37 1/2	4 1/2	3	3	3
R. & L. Nipple...	12	36	9	3 1/2	2	1 1/2	1 1/2
Gold Pin...	15	36	11 1/4	3 1/2	2	2	2
	20	36	15 1/4	3 1/2	2	2	2
School Pin...	15	36	11 1/4	4	2	2	2
	20	36	15 1/4	4	2	2	2

Air Valve Tapping 1/2".

The McCrum-Howell Co.

Manufacturers of Heating Boilers and Radiators

General Offices

Boiler Plant
NORWICH, CONN.

NEW YORK
Park Avenue and 41st Street

CHICAGO
Rush and Michigan Streets

Radiator Plant
UNIONTOWN, PENNA.

Branch Offices

BOSTON, MASS., 69-71 Federal St.
NEWARK, N. J., 43 Clinton St.
PHILADELPHIA, PA., 1108 Walnut St.
MONTREAL, CANADA, 15 Concord St.
SCRANTON, PA., 214 Wyoming Ave.
PITTSBURG, PA., 109 Jenkins Arcade

CLEVELAND, OHIO, Builders' Exchange
CINCINNATI, OHIO, 5th & Vine Sts.
ATLANTA, GA., 615 Forsyth Bldg.
DETROIT, MICH., 614 Moffatt Bldg.
INDIANAPOLIS, IND., 48 Monument Pl.
MILWAUKEE, WIS., St. Charles Hotel Bldg.

NEW ORLEANS, LA., 612 Audubon Bldg.
MINNEAPOLIS, MINN., 821 Palace Bldg.
OKLAHOMA CITY, OKLA., Majestic Bldg.
PORTLAND, ORE., 167 Seventh St.
SEATTLE, WASH., 621 Coleman Bldg.
LOS ANGELES, CAL., 347 Pacific Elec. Bldg.

For our Catalog on Vacuum Cleaning see Section 38, Cat. 1

For our Catalog on Transom Lifts and Casement Adjusters see Section 19A, Cat. 2

PRODUCTS—Manufacturers of **"RICHMOND"** and **"MODEL"** HOT-WATER AND STEAM-HEATING BOILERS, RADIATORS AND TANK HEATERS

TECHNICAL DESCRIPTION—**"RICHMOND"** and **"MODEL"** Boilers and Radiators are carefully rated to assure efficiency in operation and economy in consumption of fuel. Every detail of design and manufacture is so carefully looked after that **"RICHMOND"** Hot-Water and Steam Boilers and Radiators are recognized as fulfilling all the requirements of the most particular architects and engineers.

CAPACITY—Ratings are for Direct Radiation, and are based upon all piping (mains and risers, flows and returns) being figured as radiating surface, and in case of Steam a pressure of two pounds of steam at the Boiler; and

of Water, a temperature of 180 degrees F. in the water as it leaves the Heater. Therefore, Radiation to heat the building should be figured on the same basis, or due allowance made for other temperatures and pressures, as well as for loss of heat in the mains.

When a Pipe Coil or Cast-iron Section is placed in the fire-pot of a Heater, or a steam coil in a Tank, for the purpose of heating water for domestic use, additional capacity must be provided in determining the size of Heater required, viz.: 1¼ square feet of direct radiation for steam and 2 square feet for hot water for each gallon to be heated per hour.

The ratings are also based on the further proviso that sufficient radiation be installed to heat the building properly; that the apparatus be properly put in; that the building be provided with a flue of sufficient capacity; and that the boiler, when installed, shall receive proper care and management.

"RICHMOND" ROUND SECTIONAL STEAM BOILERS

Number of Boiler	Rating Square Feet (Note)	Price List	Fire Pot Diameter Inches	Water Line Inches	Height Inches	Smoke Collar Inches	Supply Tapping Inches	Return Tapping Inches
217-S	250	\$132.00	17	41	45	7	1-2½	1-2
317-S	300	149.50	17	46	50	7	1-2½	1-2
417-S	350	167.00	17	51	55	7	1-2½	1-2
220-S	325	158.00	20	43	46	8	1-3	1-2½
320-S	400	193.00	20	49	52	8	1-3	1-2½
420-S	450	206.50	20	54	57	8	1-3	1-2½
*520-S	500	219.50	20	59	62	8	1-3	1-2½
223-S	525	226.00	23	44	47	9	1-3	1-2½
323-S	575	240.00	23	50	53	9	1-3	1-2½
423-S	625	277.50	23	55	58	9	1-3	1-2½
*523-S	675	293.00	23	61	64	9	1-3	1-2½
326-S	750	316.00	26	51	54	10	1-4	1-3
426-S	800	331.00	26	58	61	10	1-4	1-3
*526-S	850	346.00	26	64	68	10	1-4	1-3
329-S	1,000	389.50	29	52	56	10	1-5	1-3½
429-S	1,100	419.00	29	58	62	10	1-5	1-3½
*529-S	1,200	449.00	29	64	68	10	1-5	1-3½
*629-S	1,300	477.00	29	70	74	10	1-5	1-3½

*For Hard Coal Only.

SOFT COAL: A boiler one size larger is required, when Soft Coal is to be used for fuel, than would be necessary with Hard Coal.

TYPE OF **"RICHMOND"** ROUND SECTIONAL STEAM BOILER

"A.B.C." SYSTEMS

Continued on next page



RICHMOND ROUND SECTIONAL WATER BOILERS

Number of Boiler	Rating Square Feet (Note)	Price List	Fire Pot Diameter Inches	Height Inches	Smoke Collar Inches	Supply Tapping Inches	Return Tapping Inches
217-W	400	\$114.00	17	41	7	2-2	2-2
317-W	500	140.50	17	46	7	2-2	2-2
417-W	575	158.00	17	51	7	2-2	2-2
220-W	550	149.50	20	42	8	2-2	2-2
320-W	650	184.00	20	48	8	2-2	2-2
420-W	750	197.00	20	53	8	2-2	2-2
*520-W	825	210.50	20	59	8	2-2	2-2
223-W	875	217.50	23	43	9	2-2	2-2
323-W	950	231.50	23	49	9	2-2	2-2
423-W	1,025	267.50	23	55	9	2-2	2-2
*523-W	1,100	283.00	23	61	9	2-2	2-2
326-W	1,250	306.00	26	51	10	2-3	2-3
426-W	1,325	321.00	26	57	10	2-3	2-3
*526-W	1,400	336.00	26	64	10	2-3	2-3
329-W	1,650	380.00	29	52	10	2-3	2-3
429-W	1,825	409.00	29	58	10	2-3	2-3
*529-W	2,000	438.50	29	65	10	2-3	2-3
*629-W	2,150	467.50	29	71	10	2-3	2-3

*For Hard Coal only.
SOFT COAL: A Boiler one size larger is required, when Soft Coal is to be used for fuel, than would be necessary with Hard Coal.

DELIVERY AND REPAIRS—We carry a full stock at principal centers which insures quick deliveries and prompt repairs.

TYPE OF **RICHMOND** ROUND SECTIONAL WATER BOILER



RICHMOND SECTIONAL STEAM BOILERS, WATER BASE

Number of Boiler	Rating Square Feet (Note)	Price List	Area Fire Pot Inches	Smoke Collar Inches	Number of Sections	Height of Water Line Inches	Height to Top of Supply Outlet Inches	Total Length with Smoke Box Inches	Total Width Inches	Size Supply Inches	Size Return Inches
204-S	525	\$ 238.00	22x19	10	4	46	61	34	40	1-3	2-3
205-S	675	302.50	22x25	10	5	46	61	40	40	2-3	2-3
206-S	850	355.00	22x31	10	6	46	61	46	40	2-3	2-3
207-S	1,000	400.00	22x37	10	7	46	61	52	40	2-3	2-3
208-S	1,150	445.00	22x43	10	8	46	61	58	40	2-3	2-3
305-S	1,200	460.00	28x28	12	5	50	68	45	46	1-4	2-3
306-S	1,400	520.00	28x35	12	6	50	68	52	46	2-4	4-3
307-S	1,625	587.00	28x42	12	7	50	68	59	46	2-4	4-3
308-S	1,900	670.00	28x49	12	8	50	68	66	46	2-4	4-3
309-S	2,100	730.00	28x55	12	9	50	68	73	46	2-4	4-3
42-6-W	2,400	800.00	42x35	15	6	56	78	52	64	2-5	3-4
42-7-W	2,800	880.00	42x42	15	7	56	78	59	64	2-5	3-4
42-8-W	3,350	1,004.00	42x49	15	8	56	78	66	64	2-6	4-4
42-9-W	3,900	1,125.00	42x55	15	9	56	78	73	64	2-6	4-4
42-10-W	4,400	1,228.00	42x62	18	10	56	78	80	64	2-6	4-4
42-11-W	4,900	1,324.00	42x69	18	11	56	78	87	64	2-6	4-4
42-12-W	5,400	1,424.00	42x76	18	12	56	78	94	64	2-6	4-4
42-13-W	5,900	1,524.00	42x82	18	13	56	78	101	64	2-6	4-4
42-14-W	6,400	1,624.00	42x89	18	14	56	78	108	64	2-6	4-4

SOFT COAL: A Boiler one size larger is required, when Soft Coal is to be used for fuel, than would be necessary with Hard Coal.

RICHMOND SECTIONAL WATER BOILERS, WATER BASE

Number of Boiler	Rating Square Feet (Note)	Price List	Area Fire Pot Inches	Smoke Collar Inches	Number of Sections	Height to Top of Supply Outlet Inches	Total Length with Smoke Box Inches	Total Width Inches	Size Supply Inches	Size Return Inches
204-W	850	\$ 228.00	22x19	10	4	61	34	40	1-3	2-3
205-W	1,100	292.50	22x25	10	5	61	40	40	2-3	2-3
206-W	1,400	345.00	22x31	10	6	61	46	40	2-3	2-3
207-W	1,650	390.00	22x37	10	7	61	52	40	2-3	2-3
208-W	1,900	435.00	22x43	10	8	61	58	40	2-3	2-3
305-W	2,000	450.00	28x28	12	5	68	45	46	1-4	2-3
306-W	2,350	510.00	28x35	12	6	68	52	46	2-4	4-3
307-W	2,675	577.00	28x42	12	7	68	59	46	2-4	4-3
308-W	3,150	660.00	28x49	12	8	68	66	46	2-4	4-3
309-W	3,450	720.00	28x55	12	9	68	73	46	2-4	4-3
42-6-W	3,975	780.00	42x35	15	6	78	52	64	2-5	3-4
42-7-W	4,625	860.00	42x42	15	7	78	59	64	2-5	3-4
42-8-W	5,525	984.00	42x49	15	8	78	66	64	2-6	4-4
42-9-W	6,450	1,105.00	42x55	15	9	78	73	64	2-6	4-4
42-10-W	7,250	1,208.00	42x62	18	10	78	80	64	2-6	4-4
42-11-W	8,100	1,304.00	42x69	18	11	78	87	64	2-6	4-4
42-12-W	8,900	1,404.00	42x76	18	12	78	94	64	2-6	4-4
42-13-W	9,750	1,504.00	42x82	18	13	78	101	64	2-6	4-4
42-14-W	10,575	1,604.00	42x89	18	14	78	108	64	2-6	4-4

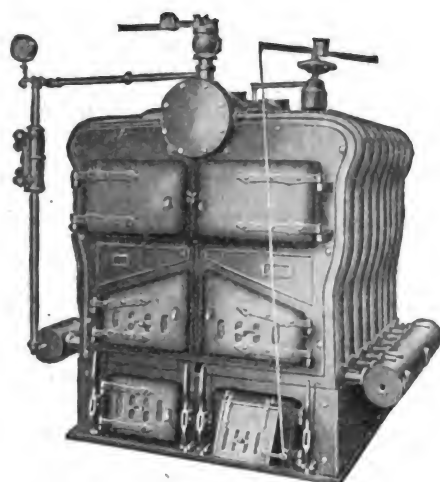
SOFT COAL: A Boiler one size larger is required, when Soft Coal is to be used for fuel, than would be necessary with Hard Coal.

NOTE.—The **RICHMOND** Sectional "Water Base" Water Boiler is the same general design as above illustration.

HOW TO SPECIFY RICHMOND BOILERS—Use the Trade Name **RICHMOND** with boiler number as required, selected from first column of table herewith.

"A.B.C." SYSTEMS

Continued on next page



TYPE OF **"RICHMOND"** TWIN SECTION,
SEPARATE BASE, BOILER

"MODEL" BOILERS—RATING CAPACITY. The capacity of the **"MODEL"** Boiler is calculated on a basis of coal consumed per hour and efficiency of the boiler as explained in price list. The rating is considered available at boiler outlet. All requirements of piping (mains and risers, flow and return) in addition to radiation to be used must therefore be provided for, also allowance as required for local conditions.

"RICHMOND" TWIN-SECTION, SEPARATE BASE, STEAM BOILERS

Number of Boiler	Rating Square Feet	Price List	Area Fire Pot Inches	Smoke Collar Inches	Number of Sections	Height to Outlet Inches	Length With Smoke Box and Front Inches	Total Width Inches	Size Supply Inches	Size Return Inches
537-S	4,000	\$1,144.00	51x 43	15x26	7	75	67	84	2-6	2-6
538-S	4,600	1,264.00	51x 50	15x26	8	75	74	84	2-6	2-6
539-S	5,150	1,374.00	51x 57	15x26	9	75	81	84	2-6	2-6
5310-S	5,700	1,484.00	51x 64	15x26	10	75	88	84	3-6	3-6
5311-S	6,400	1,624.00	51x 71	15x26	11	75	95	84	3-6	3-6
5312-S	7,200	1,784.00	51x 78	15x26	12	75	102	84	3-6	3-6
5313-S	7,950	1,934.00	51x 85	15x26	13	75	109	84	3-6	3-6
5314-S	8,450	2,034.00	51x 92	15x26	14	75	116	84	3-6	3-6
5315-S	8,950	2,134.00	51x 99	15x26	15	75	123	84	2-8	4-6
5316-S	9,450	2,234.00	51x106	15x26	16	75	130	84	2-8	4-6

"RICHMOND" TWIN-SECTION, SEPARATE BASE, WATER BOILERS

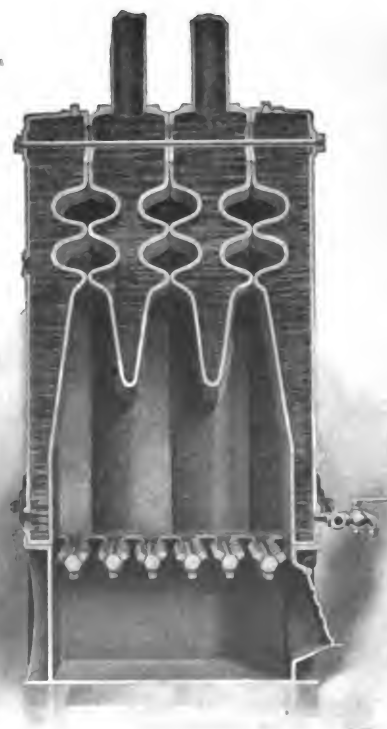
537-W	6,600	1,124.00	51x 43	15x26	7	75	67	84	2-6	2-6
538-W	7,550	1,244.00	51x 50	15x26	8	75	74	84	2-6	2-6
539-W	8,475	1,354.00	51x 57	15x26	9	75	81	84	2-6	2-6
5310-W	9,375	1,464.00	51x 64	15x26	10	75	88	84	3-6	3-6
5311-W	10,575	1,604.00	51x 71	15x26	11	75	95	84	3-6	3-6
5312-W	11,875	1,764.00	51x 78	15x26	12	75	102	84	3-6	3-6
5313-W	13,000	1,914.00	51x 85	15x26	13	75	109	84	3-6	3-6
5314-W	13,900	2,014.00	51x 92	15x26	14	75	116	84	3-6	3-6
5315-W	14,800	2,114.00	51x 99	15x26	15	75	123	84	2-8	4-6
5316-W	15,700	2,214.00	51x106	15x26	16	75	130	84	2-8	4-6

NOTE.—Each boiler furnished complete with trimmings and fire tools.

NOTE—HOW TO SPECIFY "MODEL" BOILERS—Use the trade name **"MODEL"** with boiler number as required, selected from tables given on following page.



"MODEL" STEAM BOILER
Showing Four-Section Boiler ready for operation



"MODEL" BOILER
Sectional View Showing Heating Surfaces and Waterways



"MODEL" WATER BOILER

A Six-Section "MODEL" Showing Double Door Construction



DETAIL OF A "MODEL" BOILER SECTION

The efficiency of the heating surfaces, both direct and indirect, in "MODEL" Boiler Sections is convincingly shown in this illustration—every square inch exposed to direct action of fire or products of combustion

TABLE OF DIMENSIONS—"MODEL" STEAM BOILER

Number of boiler.....	12-3	18-1B	18-3	22-3	18-4	22-4	18-5	18-6	22-5	30-4	22-6	30-5	30-6	30-7	40-6	40-7	40-8	40-9	40-10	40-11	40-12
Dimensions of grate.....	12x14	18x14	18x14	22x14	18x21	22x21	18x28	18x35	22x28	30x21	22x35	30x28	30x35	30x42	40x36	40x42	40x49	40x56	40x63	40x70	40x77
Height of boiler to top of outlet.....	48	51	51	51	51	51	51	51	51	59½	51	59½	59½	59½	65½	65½	65½	65½	65½	65½	65½
Length of boiler, including smoke box.....	29	35	35	39	35	39	35	35	39	50	39	50	50	50	60	60	60	60	60	60	60
Width of boiler, including water-front connection.....	22	22	22	22	29	29	36	43	36	32	43	39	46	53	48	55	62	69	76	83	90
Size of smoke pipe recommended.....	8	8	8	8	9	9	10	10	10	10	10	12	14	15	14	15	16	17	18	19	20
Capacity square feet water radiation.....	207	252	310	379	465	568	620	775	758	775	947	1,033	1,481	1,777	2,347	2,738	3,195	3,651	4,108	4,564	5,020
Capacity b.t.u. per hour.....	51,744	63,000	77,616	94,864	116,424	142,296	155,232	194,040	189,728	194,040	237,160	258,720	369,600	443,520	586,080	683,760	797,720	911,680	1,025,640	1,139,600	1,253,560

*Number of feet of exposed surface (with all radiators and uncovered pipes included) the boiler will carry under ordinary conditions.

TABLE OF DIMENSIONS—"MODEL" WATER BOILER

Number of boiler.....	12-3	18-1B	18-3	22-3	18-4	22-4	18-5	18-6	22-5	30-4	22-6	30-5	30-6	30-7	40-6	40-7	40-8	40-9	40-10	40-11	40-12
Dimensions of grate.....	12x14	18x14	18x14	22x14	18x21	22x21	18x28	18x35	22x28	30x21	22x35	30x28	30x35	30x42	40x36	40x42	40x49	40x56	40x63	40x70	40x77
Height of boiler to top of outlet.....	48	51	51	51	51	51	51	51	51	59½	51	59½	59½	59½	65½	65½	65½	65½	65½	65½	65½
Length of boiler, including smoke box.....	29	35	35	39	35	39	35	35	39	50	39	50	50	50	60	60	60	60	60	60	60
Width of boiler, including water-front connection.....	22	22	22	22	29	29	36	43	36	32	43	39	46	53	48	55	62	69	76	83	90
Size of smoke pipe recommended.....	8	8	8	8	9	9	10	10	10	10	10	12	14	15	14	15	16	17	18	19	20
Capacity square feet water radiation.....	114	121	127	131	175	192	1,033	1,282	1,263	1,292	1,579	1,722	2,468	2,961	3,903	4,553	5,312	6,071	6,829	7,588	8,347
Capacity b.t.u. per hour.....	51,744	63,000	77,616	94,864	116,424	142,296	155,232	194,040	189,728	194,040	237,160	258,720	369,600	443,520	586,080	683,760	797,720	911,680	1,025,640	1,139,600	1,253,560

"A.B.C." SYSTEMS

Walker & Pratt Mfg. Co.

Manufacturers of Heating Boilers

MAIN OFFICE: 31-35 UNION STREET
BOSTON, MASS.

Foundry
WATERTOWN, MASS.

PRODUCTS—CAST-IRON HEATING BOILERS
FOR STEAM OR WATER: WALKER (SECTIONAL);
CRAWFORD AND CRAWFORD CADET (ROUND)

TECHNICAL DESCRIPTION—WALKER
CAST-IRON SECTIONAL BOILER—A
heavy-duty heating boiler, tested at 100 pounds
per square inch, the sections united by mal-
leable-iron copper-coated push nipples. Fire-
box extra deep, to carry full rating with at-
tention at long intervals. High combustion
chamber, for perfect mixing and burning of
gases. High ashpit, requiring no additional
brickwork. Large doors; heavy grates, either
rocking or triangular; ample facilities for
cleaning; dampers and regulating devices per-
fect. Capacities fully guaranteed.



FOR STEAM OR WATER

CRAWFORD CAST-IRON ROUND BOILER—An exceptionally well-made boiler, with deep firepot, triangular grate, high ashpit, resting upon a cast-iron foundation or base plate. The sections are united by malleable-iron copper-coated push nipples of large diameter. Every boiler tested at 100 pounds. Perfect dampers and regulation.

CRAWFORD CADET CAST-IRON ROUND BOILER—Extra heavy sections, tested at 150 pounds per square inch. Deep firepot, strong triangular grates, deep ashpit. On feet, if desired.

PLANS—We offer the services of our engi-
neers without charge to assist in drawing
plans or specifications and making estimates.

PRINCIPAL SIZES, WITH GUARANTEED RATINGS, OF WALKER CAST-IRON SECTIONAL BOILER

No.	Firebox at Top Inches	Principal Dimensions High Wide Long			Regular Tappings Supply and Return	Size Smoke Outlet	STEAM RATING		WATER RATING	
							5 lbs. coal per sq. ft. grate per hour	6 3/4 lbs. coal per sq. ft. grate per hour	5 lbs. coal per sq. ft. grate per hour	6 3/4 lbs. coal per sq. ft. grate per hour
20-4	22 x 18	66	33	31	1-4	11	400	530	650	865
20-5	22 x 24	66	33	37	1-4	11	550	730	900	1200
20-6	22 x 30	66	33	43	1-4	11	700	930	1150	1530
20-7	22 x 36	66	33	49	2-4	11	850	1130	1400	1865
20-8	22 x 42	66	33	55	2-4	11	1000	1330	1650	2200
20-9	22 x 48	66	33	61	2-4	11	1150	1530	1900	2535
20-10	22 x 54	66	33	67	2-4	11	1300	1730	2150	2870
20-11	22 x 60	66	33	73	2-4	11	1450	1930	2400	3200
30-5	32 x 24	70	43	38	2-4	14	850	1130	1400	1865
30-6	32 x 30	70	43	44	2-4	14	1085	1450	1800	2400
30-7	32 x 36	70	43	50	2-4	14	1320	1760	2200	2935
30-8	32 x 42	70	43	56	2-4	14	1560	2080	2600	3470
30-9	32 x 48	70	43	62	2-4	14	1800	2400	3000	4000
30-10	32 x 54	70	43	68	2-4	14	2040	2720	3400	4535
30-11	32 x 60	70	43	74	2-4	14	2280	3040	3800	5070
40-5	42 x 32	80	53	40	1-6	18	1650	2200	2750	3650
40-6	42 x 40	80	53	48	1-6	18	2100	2800	3500	4650
40-7	42 x 48	80	53	56	1-6	18	2550	3400	4250	5650
40-8	42 x 56	80	53	64	2-6	18	3000	4000	5000	6650
40-9	42 x 64	80	53	72	2-6	18	3450	4600	5750	7650
40-10	42 x 72	80	53	80	2-6	18	3900	5200	6500	8650



FOR WATER FOR STEAM
CRAWFORD CAST-IRON ROUND BOILER

CRAWFORD CAST-IRON ROUND BOILER—SIZES WITH GUARANTEED RATINGS

No.	Dia. Grate, Inches	Height, Inches		Dia. Base, Inches	Smoke Pipe, Inches	STEAM RATING		WATER RATING	
						5 lbs. coal per sq. ft. grate per hour	6 3/4 lbs. coal per sq. ft. grate per hour	5 lbs. coal per sq. ft. grate per hour	6 3/4 lbs. coal per sq. ft. grate per hour
218-118	18	57	52	28	7	250	330	400	535
220-120	20	58	53	30	7	320	425	525	700
222-122	22	59	54	32	8	400	530	650	865
225-125	25	60	55	35	8	520	690	850	1135
228-128	28	61	56	38	9	650	865	1065	1425

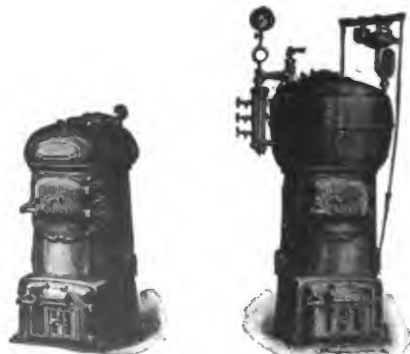
Steam supply, 3 in. Return, 2 in. Water flow and return, 4 in.

CRAWFORD CADET CAST-IRON ROUND BOILER—SIZES WITH GUARANTEED RATINGS

No.	Dia. Grate, Inches	Height, Inches	Dia. Base, Inches	Smoke Pipe, Inches	RATING		RATING	
					5 lbs. coal per sq. ft. grate per hour	6 3/4 lbs. coal per sq. ft. grate per hour	5 lbs. coal per sq. ft. grate per hour	6 3/4 lbs. coal per sq. ft. grate per hour
216 Steam	16	55	26	6	200	260	260	310
418 Steam	18	55	26	6	235	310	310	340
112 Water	12	41	22	5	180	240	240	260
114 Water	14	43	24	6	240	320	320	340
116 Water	16	45	26	6	320	430	430	460
318 Water	18	45	26	6	375	550	550	580

Steam supply, 2 in. Water flow, No. 112, 2 in.; Nos. 114, 116, 3 in.

"A.B.C." SYSTEMS



FOR WATER FOR STEAM
CRAWFORD CADET CAST-IRON ROUND
BOILER

A. G. Cripps Mfg. Co.

Manufacturers of the
Cripps Mercury-Seal Circulator

WASHINGTON AND HOPP STREETS
AKRON, OHIO

PRODUCT—"CRIPPS" MERCURY-SEAL CIRCULATOR, for Hot-water Heating Systems pipe, fittings and valves, reducing the cost of labor as well as of material required for an installation.

TECHNICAL DESCRIPTION

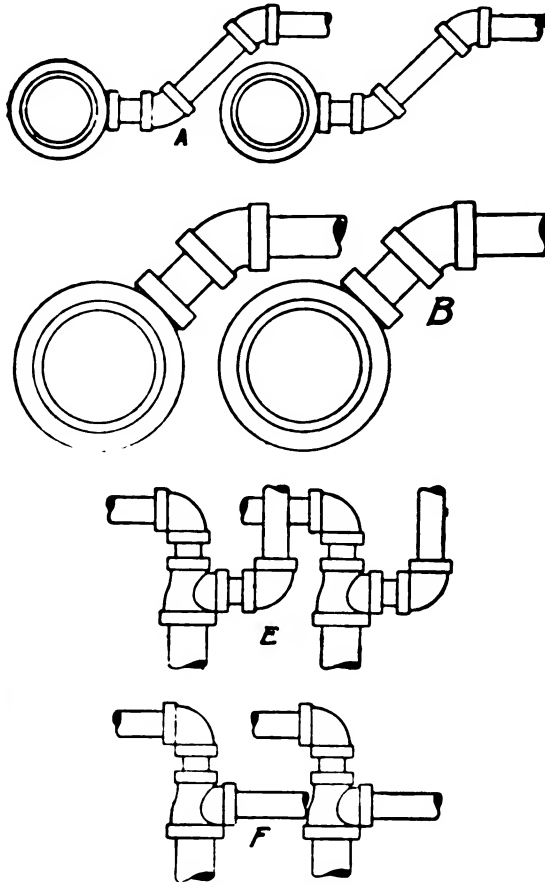
—The Cripps Circulator is placed at the side opening of the expansion tank of a hot-water heating system. Its mechanical design is such as to absolutely close the system by means of a mercury trap set between the overflow and the tank. This causes an air

Cripps Circulators are guaranteed to give full satisfaction.

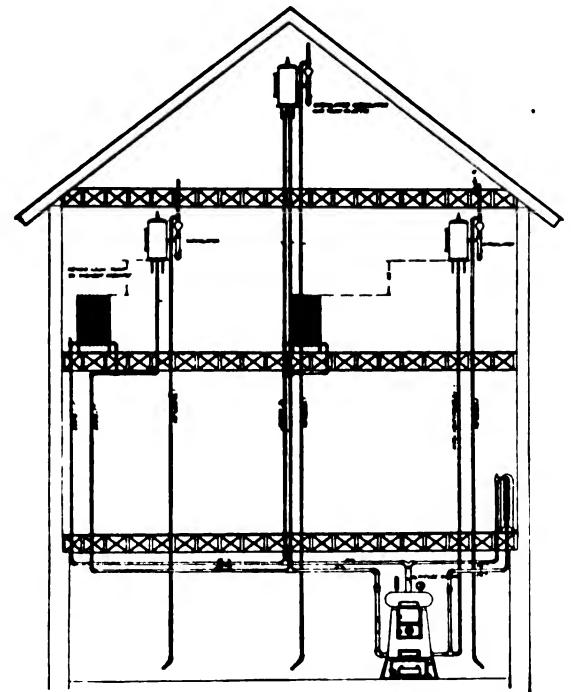
We have over 25 years' experience in the development and designing of high-grade heating boilers and heat specialties.



CRIPPS CIRCULATOR AND TANK



CONNECTIONS



CUT SHOWING VARIOUS LOCATIONS FOR PLACING TANK AND VALVE

compression in the tank and a slight pressure on the system.

The pressure varies, within a range of not more than ten pounds, in proportion as the water is required to be heated to different temperatures to suit outside conditions.

Under ordinary atmospheric pressure (14.7 pounds per square inch) water boils at 212° F. Increase of pressure by ten pounds raises the boiling point of water to about 235° F. A Cripps Circulator thus permits a maximum of safe pressure and therefore of heat. The hotter water circulating throughout such a system causes a more rapid circulation. This permits the use of smaller

ADVANTAGES

Compression of air in expansion tank.
Simplest of all in construction.
A large mercury tube.
Rapid circulation of the water.
Quick heat and economy in fuel.
Wide range of temperature.
Efficiency of low pressure steam when desired.
Equal temperature to all radiators.
No boiling over.
No interference with circulation of tank.
No water to recede through mercury.
No danger of sediment in mercury well to cause stoppage.
Gradual decrease of pressure on falling temperature.
Saving of labor and material on construction of work.
Perfection in itself and positive in action.
Absolutely guaranteed.

Mains will carry the following Radiation:

	Sq. Ft. of Radiation
1½-in. main supplies from	100- 160.
1½ " " " "	160- 220
2 " " " "	220- 425
2½ " " " "	425- 625
3 " " " "	625-1000
3½ " " " "	1000-1500
4 " " " "	1500-2000

Radiators should be tapped as follows:

FIRST FLOOR

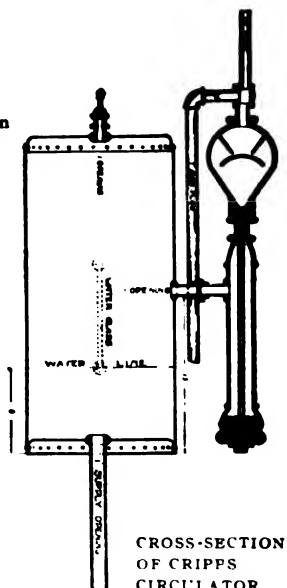
From 25 to 60 square feet..... ¾-inch
Over 100 square feet..... 1-inch

SECOND FLOOR

From 25 to 60 square feet..... ¾-inch
Over 100 square feet..... 1-inch

THIRD FLOOR

From 40 to 125 square feet... ¾-inch
Over 125 square feet..... 1-inch



CROSS-SECTION OF CRIPPS CIRCULATOR

Pierce, Butler & Pierce Mfg. Co.

Manufacturers of Pierce Boilers and Radiators

SYRACUSE, N. Y.

Branch Offices

NEW YORK CITY
Cor. 4th Avenue and 22nd St.
PHILADELPHIA
936 Arch Street
BOSTON
61 High Street

WASHINGTON
Builders' Exchange
CLEVELAND
1854 Euclid Avenue
BALTIMORE
Builders' Exchange

CHICAGO
Kellogg, Mackay Co.
MINNEAPOLIS
Kellogg, Mackay Co.
SEATTLE
Kellogg, Mackay Co.

PRODUCTS—BOILERS FOR LOW-PRESSURE STEAM AND HOT-WATER HEATING; TANKS AND LAUNDRY HEATERS, FIRE DEPARTMENT HEATERS, GREEN-HOUSE HEATERS, ETC.

RADIATORS AND FITTINGS, WALL BOXES, VALVES, HEAT ECONOMIZERS, EXPANSION TANKS, STORAGE TANKS, STEAM TRAPS, ETC.

SUPPLIES—THERMOMETERS, HEAT REGULATORS, ALTITUDE AND STEAM GAUGES, ASBESTOS COVERING, BRONZING LIQUIDS, PIPE HANGERS, ETC.

SERVICES—JOBBER IN PLUMBING AND STEAM FITTERS' SUPPLIES

PIERCE BOILERS—Pierce Steam and Water Boilers are the result of thirty-five years' development. Ours is the largest individual plant of its description in the world. We manufacture boilers of types and sizes to meet all requirements. The qualities claimed for **Pierce Boilers** are fully sustained by the record of thousands of boilers of this make in successful use today. They are designed with particular attention to secure economy in fuel, high capacity in operation, and freedom from repairs.

SECTIONAL BOILERS—The header construction has been adopted in the Pierce Boilers as the most satisfactory type of sectional boiler construction. Quick circulation and steady water-line, with noiseless and efficient service, are secured by connecting each section separately to flow and return headers, or domes, with large threaded lock nipples. The header construction has the decided advantage of allowing the adding or replacing of sections without taking the whole boiler apart or disarranging the piping.

For large buildings these boilers may be installed in batteries for economy of running in moderate weather; one alone to be used at such times.

ROUND BOILERS—The round, or portable, boilers manufactured by this Company for residences and small business buildings stand high in the estimation of heating engineers for efficiency and economy.

TESTING AND TRIMMINGS—Our boilers are carefully tested under both steam and water pressure. Each steam boiler is furnished with complete steam trimmings, including automatic damper regulator; each steam and water boiler with fire tools.

RADIATORS—We manufacture a complete line of radiators for steam and water, plain and ornamented in any form and capacity required. Our regular line is made in one-, two-, three- and four-column style, four-column window radiators, three-column dining room radiators with warming closet, two- and three-column semi-direct and indirect radiators.



PIERCE MARK

POINTS FOR SPECIFICATIONS—In making up specifications for heating installations the following points are essential: That sufficient radiation be figured to heat the building properly; that the apparatus be located and installed in a practical way; that the building be provided with a flue of sufficient capacity.

In estimating the size of boiler required for direct radiation, all piping (mains and risers, flow and return) must be figured as radiating surface in addition to the radiators and coils, etc., that are to be used. Mains, if not properly covered, necessitate more boiler capacity in figuring the radiation than would the same amount of direct radiation.

It is a good practice to use a boiler with a **reserve capacity**; the surface area in mains as well as in the radiators should be figured on this basis. This tends not only to protect the boiler against *perpetual overstrain*, but provides for extraordinary temperatures and pressures without risk or injury.

HEATING WATER—When a pipe coil or cast-iron section is introduced into the fire-pot, or a steam coil placed in a tank for the purpose of heating water for domestic use, additional capacity should be provided for, in estimating size of steam or water boiler required, at the rate of 2 square feet of direct radiation for steam and 3 square feet of direct radiation for water for each gallon of water to be thus heated per hour.

RATINGS—Our ratings are based on the assumption that *hard coal* is to be used for fuel, and that boilers without a jacket shall be covered with non-conducting material. However, in addition we are prepared to supply our boilers with grates for consumption of other kinds of fuel. This matter will have to be subject of special correspondence, so as to obtain sizes, ratings, etc.

CAPACITIES—The tables on tank capacities represent the estimated size of tanks which experience has shown heaters will supply for ordinary family use. For any special requirement special capacity should be provided.

We strongly recommend that our boilers and all mains be *thoroughly* protected with asbestos covering in order to secure full efficiency and greatest fuel economy.

TRADE MARK—The Pierce Trade Mark is affixed to all products of this company and guarantees the highest quality.

TO ARCHITECTS—Our extensive experience and corps of heating experts are at the disposal of architects who wish to consult us on heating problems.

AMERICAN STEAM AND WATER BOILERS—In these boilers are to be found qualities which recommend them at once to architects and heating engineers. Being made of cast iron, they possess many advantages over sheet steel or iron boilers. They are practically rustproof; and the composition of the metal is regulated to produce a material capable of withstanding stresses caused by uneven expansion and contraction.

The weight and thickness of the castings are such as to render the boilers practically *indestructible*. All castings are tested to eighty pounds pressure. All surfaces in these boilers, being backed up by water, the danger of *overheating and burning* is *eliminated*.

PIERCE-AMERICAN STEAM AND WATER BOILERS

DIMENSIONS, TAPPINGS AND PRICES

No. 21 Series.

Number for	Steam	Water	No. Sec.	Combustion Chamber	Height of Boiler	Width of Boiler	Length of Boiler	Height of Water Line	Size Smoke Pipe	Number and Size			Capacity		Price	
										Outlets	Returns	Out and Ret. Water	Steam	Water	Steam	Water
S214...	W214		4	23x23	56	44	47	40	10	2-2	2-2	2-2	600	1000	\$259	\$249
S215...	W215		5	23x31	56	44	55	40	10	2-2	2-2	2-3	800	1325	340	330
S216...	W216		6	23x39	56	44	63	40	10	2-2	2-2	2-3	1000	1650	400	390
S217...	W217		7	23x47	58	47	71	40	10	2-2	2-2	2-3	1200	2000	460	450

No. 26 Series.

S265...	W265		5	29x31	66	53	55	46	12	2-2	2-2	2-3	1100	1825	430	420
S266...	W266		6	29x39	66	53	63	46	12	2-3	2-2	2-4	1400	2825	520	510
S267...	W267		7	29x47	66	53	71	46	12	2-3	2-2	2-4	1700	2825	610	600
S268...	W268		8	29x55	66	53	79	46	12	2-3	2-2	2-4	2000	3300	700	690

No. 32 Series.

S325...	W325		5	36x31	68	61	55	47	14	2-3	2-2	2-4	1400	2325	520	510
S326...	W326		6	36x39	68	61	63	47	14	2-3	2-2	2-4	1750	2900	624	614
S327...	W327		7	36x47	68	61	71	47	14	2-4	2-3	2-5	2100	3475	730	710
S328...	W328		8	36x55	68	61	79	47	14	2-4	2-3	2-5	2450	4050	822	802
S329...	W329		9	36x63	68	61	87	47	14	2-4	2-3	2-5	2800	4625	904	884
S3210...	W3210		10	36x71	68	61	95	47	14	2-4	2-3	2-5	3150	5200	960	940

No. 40 Series.

S405...	W 405		5	43x31	70	69	55	49	16	2-4	2-3	2-5	1900	3150	670	660
S406...	W 406		6	43x39	70	69	63	49	16	2-4	2-3	2-5	2400	3975	810	790
S407...	W 407		7	43x47	70	69	71	49	16	2-4	2-3	2-5	2900	4800	924	904
S408...	W 408		8	43x55	70	69	79	49	16	2-4	2-3	2-5	3400	5625	1024	1004
S409...	W 409		9	43x63	70	69	87	49	16	2-5	2-4	2-6	3900	6450	1124	1104
S4010...	W4010		10	43x71	70	69	95	49	16	2-5	2-4	2-6	4400	7275	1224	1204
S4011...	W4011		11	43x79	70	69	103	49	16	2-5	2-4	2-6	4900	8100	1324	1304

No. 46 Series.

S 466...	W 466		6	53x 40	84	82	68	55	20	2 4 2 3 2 5	3500	5900	1044	1024
S 467...	W 467		7	53x 48	84	82	76	55	20	2 5 2 4 2 6	4250	7025	1194	1174
S 468...	W 468		8	53x 56	84	82	84	55	20	2 5 2 4 2 6	5000	8250	1344	1324
S 469...	W 469		9	53x 64	84	82	92	55	20	2 5 2 4 2 6	5750	9600	1494	1474
S4610...	W4610		10	53x 72	84	82	100	55	20	2 6 2 4 2 8	6500	10725	1644	1624
S4611...	W4611		11	53x 80	84	82	108	55	20	2 6 2 4 2 8	7250	11975	1794	1774
S4612...	W4612		12	53x 88	84	82	116	55	20	2 6 2 4 2 8	8000	13200	1944	1924
S4613...	W4613		13	53x 96	84	82	124	55	20	2 6 2 4 2 8	8750	14450	2094	2074
S4614...	W4614		14	53x104	84	82	132	55	20	2 6 2 4 2 8	9500	15700	2244	2224

OTHER DIMENSIONS PIERCE-AMERICAN BOILERS

	21 Series	26 Series	32 Series	40 Series	46 Series
A	61 1/2 inches	71 inches	74 inches	75 inches	89 inches
B	56 1/2 "	66 "	68 1/2 "	70 "	84 "
C	40 1/2 "	46 1/2 "	48 1/2 "	49 1/2 "	58 1/2 "
D	26 "	31 1/2 "	32 1/2 "	33 1/2 "	39 1/2 "
E	34 1/2 "	44 "	45 1/2 "	46 1/2 "	56 1/2 "
F	16 1/2 "	16 1/2 "	16 1/2 "	16 1/2 "	19 1/2 "
G	13 1/2 "	13 1/2 "	13 1/2 "	13 1/2 "	15 1/2 "
H	13 1/2 "	13 1/2 "	13 1/2 "	13 1/2 "	15 1/2 "
X	41 "	47 1/2 "	49 1/2 "	49 1/2 "	59 1/2 "

NOTE—All measurements are in inches.

*These are extreme measurements.

†See note regarding capacity on page 1.

‡Special size smoke pipe and spec. of sizes or location of tappings can be furnished at net prices shown on discount sheet. Blank grate sections for brick fire wall to reduce size of grate will be supplied without extra charge when boiler is so ordered.

"A.B.C." SYSTEMS

Pierce Steam Boilers are as easy and safe to operate as water boilers. They are supplied fully equipped with safety valve, water gauge, pressure gauge, damper regulators, and fire tools. These boilers may be installed either singly or in batteries of two or more and so arranged that during mild weather a reduction may be made in the number of boilers used.



PIERCE "AMERICAN," 26 SERIES
WATER



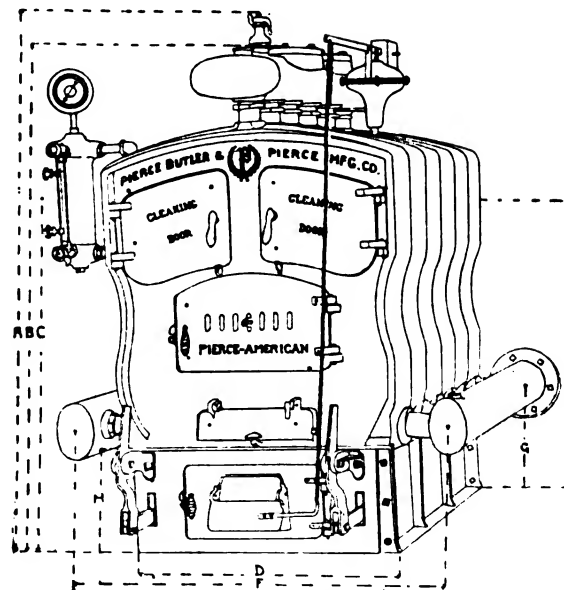
PIERCE "AMERICAN," 32 SERIES
STEAM



THREE 46 SERIES "AMERICAN" BOILERS
Showing how they can be connected up to
use one, two or three boilers as desired



PIERCE "AMERICAN" SECTIONAL
VIEW



MEASUREMENTS
AMERICAN STEAM AND WATER BOILERS

Continued on next page

PIERCE "SPENCE" WATER BOILER—An exceptionally economical boiler, made of cast-iron, well fitted and finished, in two styles, A and D. Style A is fitted to burn either hard or soft coal or gas. Style D is built in two patterns, high and low base, fitted for any fuel.

A distinguishing feature of these boilers is the *detachable water post*. This is an attachment for connecting the waterways between the sections and the mains, and in practical application has proven all that is claimed for it. By an inspection of the sectional views of the heater it will be seen how the water passes from the fire pot to the water post.

The water post is divided by a partition causing the water to travel up one side into and around the sections and then back, by the other side of the water post, to the system. The water post attachment brings all water connections on the outside of the boiler, away from the action of the fire and where they can be seen.

By fastening the water post to the sections by *long bolts*, which do not come into contact with the fire, a fastening is secured which, while being permanent, can be loosed if necessary.



PIERCE "SPENCE" STYLE "A"



SHOWING BASE WITH TRIANGULAR GRATES
 USED ON PIERCE ROUND BOILERS

PIERCE "SPENCE" WATER BOILER—STYLE A
 FOR HARD OR SOFT COAL OR GAS
 TABLE OF DIMENSIONS

Number Boiler	Height to Top of Flange	Number Sections	Diameter Fire Pot	Outside Diameter		Diameter Smoke Pipe	No. and Size Branch Outlets	Size Single Outlet	Capacity	Price with Single Outlet	Price with Branch Headers
				Right to Left	Front to Rear						
310	50	5	16	26	31 1/2	7	2-2	2 1/2	350	\$102	\$108
320	53	5	19	28 1/2	36	7	4-2	3	450	130	136
330	54 1/2	5	20	31 1/2	37 1/2	8	4-2	3	600	166	175
332	53 1/2	4	23	34 1/2	42 1/2	9	4-2	3 1/2	775	204	213
340	57 1/2	5	23 1/2	34 1/2	42 1/2	9	4-2	3 1/2	900	224	233
342	56 1/2	4	27	38 1/2	48	10	4-2	3 1/2	1050	274	283
350	61	5	27	38 1/2	48	10	5-2	4	1200	300	323
352	65 1/2	6	27	38 1/2	48	10	5-2	4	1300	318	341
360	64 1/2	5	30	41	51	11	7-2	4	1600	372	395
362	69 1/2	6	30	41	51	11	7-2	4	1750	398	421
370	67	5	34	43	52	12	7-2	5	2150	466	493
372	72	6	34	43	52	12	7-2	5	2350	500	527

In ordering state whether branch outlets or single outlet is required. If not otherwise specified, single outlet will be sent. Branch outlets are extra.
 To get extreme height with branch outlets, Style "A," add on Nos. 310 and 320, 6 1/2"; 330 to 340, 7"; 342 to 372, 9".



PIERCE "SPENCE" STYLE "D"
 LOW BASE



PIERCE "SPENCE" STYLE "D"
 HIGH BASE

PIERCE "SPENCE" WATER BOILER—STYLE D
 FOR ANY FUEL

TABLE OF DIMENSIONS

Number Boiler		Height Boiler		Number Sections	Outside Measurements				Diameter Fire Pot	Diameter Smoke Pipe	Number and Size Header Openings, Flow and Return	Size Single Outlet	Capacity	List Prices			
Low Base	High Base	Low Base	High Base		Low Base Right to Left	Low Base, Front to Rear, includ- ing Flanges	High Base Right to Left	High Base, Front to Rear, includ'g Flanges						Low Base Single Outlet	Low Base Branch Outlets	High Base Single Outlet	High Base Branch Outlets
410	510	55 ½	62 ½	5	26	32 ½	24	30	16 ½	7	2-2	2 ½	425	\$124	\$134	\$144	\$154
412	512	54	61 ½	4	28 ½	36	26 ½	33 ½	19 ½	7	2-2	3	600	166	176	186	196
420	520	57 ½	64 ½	5	28 ½	36	26 ½	33 ½	19 ½	7	4-2	3	650	182	194	202	214
423	523	53 ½	60 ½	4	31 ½	38 ½	28 ½	35 ½	21 ½	8	4-2	3	725	194	206	214	226
430	530	58 ½	65 ½	5	31 ½	38 ½	28 ½	35 ½	21 ½	8	4-2	3 ½	800	206	218	226	238
434	534	56 ½	63 ½	4	34 ½	43 ½	32	39 ½	24 ½	9	4-2	3 ½	1000	236	248	261	273
440	540	60 ½	67 ½	5	34 ½	43 ½	32	39 ½	24 ½	9	4-2	3 ½	1100	282	294	307	319
445	545	57	64 ½	4	36 ½	46	34 ½	41 ½	26 ½	10	4-2	4	1300	318	330	343	355
450	550	61 ½	69 ½	5	36 ½	46	34 ½	41 ½	26 ½	10	5-2	4	1450	342	357	367	382
456	556	61 ½	66 ½	4	36 ½	36 ½	36 ½	45	28 ½	10	5-2	4	1650	380	395	410	425
460	560	65 ½	71 ½	5	36 ½	36 ½	36 ½	45	28 ½	10	5-2	4	1800	404	419	434	449
467	567	60	68 ½	4	41	52	38 ½	47	30 ½	10	7-2	4	2000	438	468	498	528
470	570	64	72 ½	5	41	52	38 ½	47	30 ½	10	7-2	5	2200	480	510	540	570
478	578	63	69 ½	4	41	41	41	49 ½	32 ½	12	7-2	5	2400	515	545	580	620
480	580	67 ½	74 ½	5	41	41	41	49 ½	32 ½	12	7-2	5	2650	555	585	590	620

In ordering state whether single or branch outlets are wanted. If not otherwise specified single outlets will be sent. Branch outlets are extra.

To get extreme height with branch outlets, add Nos. 410 and 412 to 440 and 540, 7"; Nos. 445 and 545 to 480 and 580, 9".
 All boilers are shipped with outlets looking up, but on Nos. 456 and 556 and larger we can furnish headers with outlets looking back, when so ordered. This gives 8-2" flow openings. This style of header adds 4 1/2" on Nos. 456, 556, 467, 567, 478 and 578, 5 1/2"; on Nos. 460, 560, 470, 570, 480 and 580.

All Spence boilers are cored for domestic coal.

"A.B.C." SYSTEMS



PIERCE "SPENCE," SECTIONAL VIEW

Continued on next page

PIERCE "TOURNAINE" STEAM AND WATER BOILERS—Strong and durable, made of cast-iron so as to be practically rustproof. Economical in fuel consumption, and at the same time giving greatest amount of radiation.



PIERCE "TOURNAINE" STEAM BOILER



PIERCE "TOURNAINE," SECTIONAL VIEW

PIERCE TOURNAINE STEAM AND WATER BOILERS

DIMENSIONS

Number of Boiler	For Steam	For Water	Height, Boiler to Top of Outlet	Outside Diameter		Inside Diameter of Fire Pot	Height Water Line Steam Boiler	No. and Size Outlets	Size Return	Diameter Smoke Pipe	Steam Capacity	Water Capacity	Price	
				Right to Left	Front to Rear								For Steam	For Water
2	1	48	30	31	20	44	2-2	2-2	2-2	8	350	575	\$166	\$156
4	3	54	30	31	20	49	2-2	2-2	2-2	8	400	650	192	182
6	5	59	30	31	20	54	2-2	2-2	2-2	8	450	750	206	196
8	7	64	34	37	24	59	2-2	2-2	2-2	9	500	825	218	208
10	9	69	34	37	24	64	2-2	2-2	2-2	9	550	900	232	222
14	13	79	38	40	28	74	2-2	2-2	2-2	10	600	1000	246	236
16	15	84	38	40	28	79	2-2	2-2	2-2	10	650	1100	260	250
20	19	94	43	44	32	89	2-2	2-2	2-2	12	850	1400	346	336
22	21	99	43	44	32	94	2-2	2-2	2-2	12	900	1500	360	350
24	23	104	43	44	32	99	2-2	2-2	2-2	12	950	1600	374	364

PIERCE MODERN STEAM AND WATER BOILERS—An all cast iron boiler, made of few parts, easy to erect. Has an effective water travel and is economical in the use of fuel. A good boiler for residence heating.

PIERCE MODERN STEAM AND WATER BOILERS

DIMENSIONS

Number Boiler	Height Boiler to Top of Outlets, Steam Inches	Height Boiler to Top of Outlets, Water Inches	Height Water Line, Steam	Inside Diameter Fire Pot	Outside Measurements		No. and Size Outlets and Returns	Size Smoke Pipe	Capacity, Steam	Capacity, Water	Price, Steam	Price, Water
					Base Right to Left	From Front to Rear Including Smoke Hood						
10	48 1/2	43 1/2	44 1/2	16 1/2	26	33 1/2	2-2	8	300	500	\$148	\$138
20	51	45 1/2	45	18 1/2	28 1/2	36 1/2	2-2 1/2	8	375	600	180	170
30	52 1/2	46 1/2	46 1/2	20 1/2	31 1/2	39 1/2	2-3	9	475	800	212	202
40	57 1/2	52 1/2	51 1/2	23 1/2	34 1/2	43 1/2	2-3	9	600	1000	246	236
45	57 1/2	53 1/2	52 1/2	25 1/2	36 1/2	45 1/2	2-3	9	700	1150	300	290
50	57 1/2	54	53	27 1/2	38 1/2	49	2-4	10	850	1400	346	336
55	58 1/2	56 1/2	55 1/2	30	41	52	2-4	10	1000	1650	389	379
60	58 1/2	56 1/2	55 1/2	30	41	52	2-4	10	1150	1900	434	424



PIERCE "MODERN" WATER BOILER



PIERCE "MODERN" STEAM BOILER

PIERCE "FLORIDA" STEAM TROPIC WATER BOILERS—An efficient boiler for heating residences or small public buildings. Economical in use of fuel and very durable.



PIERCE "FLORIDA" BOILER

FLORIDA 1500 SERIES STEAM BOILER

TABLE OF DIMENSIONS

Num-Boiler	Height Boiler	Outside Measurements		Inside Diameter Fire-Pot	Height Water Line	Diameter Smoke Pipe	No. and Size Outlets	No. and Size Returns	Capacity	Price
		Right to Left	Front to Rear							
1501	51	26	29	14 1/2	44	5	2-2	2-2	175	\$100
1502	52	28 1/2	31 1/2	17	45 1/2	6	2-2 1/2	2-2 1/2	250	124
1503	54 1/2	31 1/2	34 1/2	19	48 1/2	7	2-3	2-3	325	158
1504	58 1/2	34 1/2	37	21	51 1/2	8	2-3	2-3	450	204
1505	64	35 1/2	38 1/2	25	56	9	2-4	2-4	600	244

TROPIC 1500 SERIES WATER BOILER

Num-Boiler	Height Boiler	Outside Measurements		Inside Diameter Fire-Pot	Height Water Line	Diameter Smoke Pipe	No. and Size Outlets	No. and Size Returns	Capacity	Price
		Right to Left	Front to Rear							
1511	51	26	29	14 1/2	.....	5	2-2	2-2	300	\$90
1512	52	28 1/2	31 1/2	17	.....	6	2-2 1/2	2-2 1/2	400	114
1513	54 1/2	31 1/2	34 1/2	19	.....	7	2-3	2-3	525	148
1514	58 1/2	34 1/2	37	21	.....	8	2-3	2-3	750	194
1515	64 1/2	35 1/2	38 1/2	25	.....	9	2-4	2-4	1000	234

LITTLE GIANT SCREW NIPPLE WATER BOILER AND TANK HEATER

No. of Boiler	Cipher	No. of Ring Sects	Diameter of Grate	Extreme Height	Height to Top of Outlet	No. and Size of Inlets	No. and Size of Outlets	Diameter of Boiler	Diameter of Smk. Pipe	Tank Capacity	Radiating Capacity	Price
102.....	Label.....	0	10	34½	*27½	1-2	1-2	19½	5	100	75	\$38
122.....	Labor.....	0	12	36½	*29½	1-2	1-2	19½	5	250	185	54
162.....	Lack.....	0	16	37½	32½	1-2½	1-2½	25	6	375	250	72
164.....	Lamp.....	1	16	42½	38	1-2½	1-2½	25	6	450	300	90
166.....	Lance.....	2	16	48	43½	1-2½	1-2½	25	6	525	350	105
202.....	Lane.....	0	20	38½	34	2-3	2-3	29	7	600	425	108
204.....	Lapse.....	1	20	44½	40	2-3	2-3	29	7	700	475	133
206.....	Larch.....	2	20	50½	46	2-3	2-3	29	7	800	575	148

*Height to center of outlet.

LITTLE GIANT TANK AND LAUNDRY HEATERS—
 For heating large quantities of water for domestic use. The Little Giant Tank Heater can be used either as a tank heater or as a water boiler for small residences. The Little Giant Laundry heaters have flat tops with removable grids.

These boilers are economical in fuel consumption. Of solid, simple construction, which gives durability and freedom from repairs.



"LITTLE GIANT" WATER BOILER

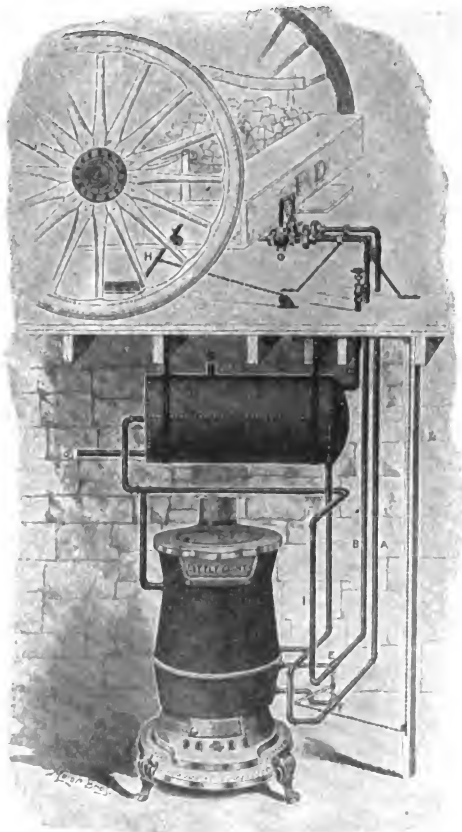
LITTLE GIANT TANK HEATER
 DIMENSIONS AND TAPPINGS

No. of Boiler	Cipher	Height, inches	Diameter, inches	Diameter of Grate, inches	Size of Tapping inches	Diameter of Smoke Pipe	Tank Capacity	Radiating Capacity	Price
*10	Lamb.....	32	14	10	1½	5	80	60	\$34
†12	Lad.....	35	16	12	1½	5	150	115	40
‡12A	Alad.....	39	16	12	1½	5	200	150	46
|| 12B	Blad.....	39	16	12	1½	5	250	185	54
116	Lake.....	38½	19	16	1½	6	325	200	64
‡16A	Alake.....	42½	19	16	1½	6	375	250	72
|| 16B	Blake.....	42½	19	16	1½	6	400	285	76
120	Lard.....	40½	24	20	2	6	425	300	80
|| 20B	Blard.....	44½	24	20	2	6	600	425	108

* Single section, no brick lining. † Brick-lined fire pot.
 ‡ Brick-lined fire pot and extra 5-inch water-section fire pot.
 || 9-inch extra water section fire pot without brick lining.
 Price is on the heater only—does not include the tank and connections.



THE "LITTLE GIANT" TANK HEATER



SECTIONAL CUT SHOWING INSTALLATION OF FIRE DEPARTMENT HEATER

FIRE DEPARTMENT HEATER—The above cut shows the installation of a Little Giant Boiler for Fire Department service. By this means the water in the fire engine is kept so that steam can be raised immediately. The upper water section is connected to the tank in which the hot water is stored for use in the men's quarters, bathrooms and lavatory.

"A.B.C." SYSTEMS



"LITTLE GIANT" HIGH LEG LAUNDRY



"LITTLE GIANT" LOW-DOWN LAUNDRY

LITTLE GIANT LOW-DOWN LAUNDRY
 DIMENSIONS AND PRICES

No. of Boiler	Cipher	Height.	Diameter of Grate	No. and Size of Outlets	No. and Size of Returns	Size of Smoke Pipe	Tank Capacity Gallons	Price
111.....	Aard.....	25½	12	1-1	1-1	6	50	\$30
123.....	Abaca.....	25½	12	1-1	1-1	6	85	34
101.....	Abaft.....	25½	12	1-1½	1-1½	6	125	34
112.....	Abha.....	26½	16	1-1½	1-1½	6	225	46

LITTLE GIANT HIGH LEG LAUNDRY
 DIMENSIONS AND PRICES

No.	Cipher	Height	Diameter of Grate	No. and Size of Outlets	No. and Size of Inlets	Size of Smoke Pipe	*Tank Capacity Gallons	Price
8.....	Aglow.....	24	8	1-1	1-1	6	40	\$25

*Top measures 21½ x 16 inches, large enough to hold a large-size wash boiler or several irons. Has two 7-inch removable covers and one removable center piece.

Continued on next page

PIERCE LOURAINÉ RADIATORS—Made either plain or ornamental, of cast iron of same composition as Pierce boilers, producing greatest strength combined with good radiating capacity. They are furnished in any height, length or shape to suit different requirements. Lorraine Radiators are made for three standard methods of heating: Direct, semi-direct and indirect.

PIERCE LOURAINÉ DIRECT RADIATORS
Area Square Feet per Section

Height, Inches	Lorraine, One-Column	Lorraine, Two-Column	Lorraine, Three-Column	Lorraine, Four-Column	Lorraine, Wall	Lorraine, Window	Price Per Foot, Cents
45...	3 1/2	6	9	12	1 1/2	4 1/2	42
44	3 1/2	6	9	12	1 1/2	4 1/2	42
38	2 1/2	4 1/2	6 1/2	8 1/2	1 1/2	3 1/2	42
36	2 1/2	4 1/2	6 1/2	8 1/2	1 1/2	3 1/2	42
26	2	3 1/2	5 1/2	7 1/2	1 1/2	2 1/2	46
24	2	3 1/2	5 1/2	7 1/2	1 1/2	2 1/2	50
22	1 1/2	2 1/2	4 1/2	6 1/2	1 1/2	2 1/2	50
20	1 1/2	2 1/2	4 1/2	6 1/2	1 1/2	2 1/2	53
18	1 1/2	2 1/2	4 1/2	6 1/2	1 1/2	2 1/2	57
16	1 1/2	2 1/2	4 1/2	6 1/2	1 1/2	2 1/2	58
14	1 1/2	2 1/2	4 1/2	6 1/2	1 1/2	2 1/2	60
12	1 1/2	2 1/2	4 1/2	6 1/2	1 1/2	2 1/2	64
Width Section Inches	5	7 1/2	9	12	5	12	...
Width Feet Inches	5 1/2	7 1/2	9 1/2	12 1/2	...	12 1/2	...

All sections are 2 1/2 inches thick.



Plain

Ornamented

LOURAINÉ RADIATORS

STEAM AND WATER TAPPINGS
Direct Radiators

Water—Two-Pipe

Radiator containing square feet...	0 to 40	40 to 72	72
Are tapped.....inches	1	1 1/2	1 1/2

Distance from Floor to Center of Opening

1, 2, 3 and 4 cols.....inches	4 1/2	4 1/2	5
Window, 22, 18, 14.....inches	4 1/2	4 1/2	5
Window, 24, 20, 16, 12.....inches	2 1/2	2 1/2	3

Steam—One-Pipe

Radiator containing sq. feet	0 to 24	24 to 60	60 to 100	100
Are tapped.....inches	1	1 1/2	1 1/2	2

Distance from Floor to Center of Opening

1, 2, 3 and 4 cols.....inches	4 1/2	4 1/2	5	5
Window, 22, 18, 14.....inches	4 1/2	4 1/2	5	5
Window, 24, 20, 16, 12.....inches	2 1/2	2 1/2	3	3

THE LOURAINÉ SEMI-DIRECT RADIATOR—Furnished either plain or ornamented. The lower half is covered by a semi-direct ventilating base which can be bolted to any two-or-three-column radiator to cover the number of sections listed below. An adjustable damper, operating from the front, admits air to the radiator from the outside in such quantities as may be desired.

STEAM—Two Pipe

Radiator containing square feet	0 to 48	48 to 96	96
Are tapped.....inches	1 1/2	1 1/2	1 1/2

Distance from Floor to Center of Opening

1, 2, 3 and 4 cols.....inches	4 1/2	4 1/2	5	5
Window, 22, 18, 14.....inches	4 1/2	4 1/2	5	5
Window, 24, 20, 16, 12.....inches	2 1/2	2 1/2	3	3

SPECIAL TAPPINGS—Lorraine Radiators can be tapped at top and bottom, same end; or at top and bottom, opposite ends. Below are given measurements from center of top tapping to floor.

TESTS

Height	1 Col	2 Col	3 Col	4 Col	Height	1 Col	2 Col	3 Col	4 Col
45 inches	...	42 1/2	...	...	26 inches	2 1/2	2 1/2	2 1/2	2 1/2
44 inches	41 1/2	...	41 1/2	...	22 inches	1 1/2	...	1 1/2	1 1/2
38 inches	35 1/2	35 1/2	35 1/2	35 1/2	20 inches	...	1 1/2	...	...
32 inches	29 1/2	29 1/2	29 1/2	29 1/2	18 inches	1 1/2	...	1 1/2	1 1/2

END VIEW OF
3-COLUMN RADI-
ATOR SHOWING
TAPPINGS

In changing the location of, or providing for additional tappings, an extra charge of 50 cents net per tapping will be made.
On radiators ordered with double hub-tapping, an extra charge of \$1.00 will be made per radiator.

All radiators, unless otherwise specified, are tapped 2 inches and bushed to regular sized tappings. These bushings add about 1 1/2 inches to the length of radiator with two pipe tappings.

"A.B.C." SYSTEMS



LOURAINÉ SEMI-DIRECT RADIATOR
TABLE OF DIMENSIONS
TWO COLUMN RADIATORS

No. of Radiator Secs.	No. of Secs. Boxed	Outside Meas. "B" Inches	Outside Meas. "C" Inches	Outside Meas. "D" Inches	List Price
6	4	4 1/2	10 1/2	2 1/2 x 7 1/2	\$1.60
7	5	4 1/2	13	2 1/2 x 9	2.00
8	6	4 1/2	15	2 1/2 x 12	2.40
9	7	4 1/2	18	2 1/2 x 14	2.80
10	8	4 1/2	20	2 1/2 x 17	3.20
11	9	4 1/2	23	2 1/2 x 19 1/2	3.60

THREE COLUMN RADIATORS

No. of Radiator Secs.	No. of Secs. Boxed	Outside Meas. "B" Inches	Outside Meas. "C" Inches	Outside Meas. "D" Inches	List Price
6	4	5 1/2	10 1/2	3 1/2 x 7 1/2	\$1.60
7	5	5 1/2	13	3 1/2 x 9	2.00
8	6	5 1/2	15	3 1/2 x 12	2.40
9	7	5 1/2	18	3 1/2 x 14	2.80
10	8	5 1/2	20	3 1/2 x 17	3.20
11	9	5 1/2	23	3 1/2 x 19 1/2	3.60
12	10	5 1/2	25 1/2	3 1/2 x 22 1/2	4.00

"D" is one-half inch above floor line.
See lists of Two and Three-Column Radiators for capacities.



LOURAINÉ SEMI-DIRECT
3-COLUMN RADIATOR

The Iroquois Engineering Co.

Distributors for

AUTOMATIC VACUUM PUMP COMPANY

The "Sparks" System of Positive Steam Circulation

Offices

CHICAGO, ILL.
Fisher Building

COLUMBUS, OHIO
Columbus Trust and
Savings Bank

MINNEAPOLIS, MINN.
Security Bank Building

KANSAS CITY, MO.
Scarritt Building

ST. LOUIS, MO.
Chemical Building

PRODUCTS—"SPARKS" AUTOMATIC VACUUM PUMP; "SPARKS" VALVES; "SPARKS" SYSTEM OF POSITIVE STEAM CIRCULATION (all patented), for Hotels, Office Buildings, Schools, Public Buildings and Industrial Plants

VACUUM HEATING—It has been conceded by all who have devoted study to the problem of heating that steam inherently affords the most satisfactory and the most economical medium for heating purposes. A short summary of the properties of steam should, therefore, be of interest to those contemplating the installation of new plants or to those operating existing ones:

The temperature at which steam is given off from boiling water varies in accordance with the boiling point of the water. This boiling point varies in accordance with the pressure on the water's surface. In an open vessel, and at sea level, water will boil at 212 degrees Fahrenheit. Under these conditions the pressure on the surface of the water is the weight of a column of air 1 square inch in section, or actually 14.7 pounds above absolute vacuum.

An increase in the pressure on the surface of the water raises its boiling point, while a decrease in the pressure lowers the boiling point. To have a heating system work economically, therefore, steam must be generated and circulated at low temperatures and low pressures. To accomplish this some system of air-removing must be installed.

Air is the greatest obstruction in circulating steam through radiators and coils at less than atmospheric pressures. It is always in evidence in greater or lesser quantities in all heating systems.

The "Sparks" Automatic Pump is the greatest air remover and vacuum producing apparatus in use today and is the only apparatus of its kind that will remove air and produce a vacuum without the aid of outside power. It is absolutely automatic in operation—nothing to wear out or get out of order, consequently involves a very low maintenance cost.

GUARANTEE—We guarantee a positive and quick circulation of live or exhaust steam at a pressure less than that of the atmosphere, if the plant is properly designed and installed, and to automatically remove all air and water of condensation from the radiators without the aid of power.

We also guarantee our vacuum pumps and air valves to be perfect in design and construction, and that the pump will be absolutely automatic in operation.

"A.B.C." SYSTEMS

HOW TO SPECIFY THE "SPARKS" SYSTEM OF HEATING—In addition to the supply and return pipes, etc., used in connection with the Heating System, furnish and install the necessary air piping for equipping the entire plant with the "Sparks" System of Positive Steam Circulation, supplying all the necessary air valves, Vacuum Pump, etc., complete as hereinafter specified.

From the automatic air valves on all radiators and coils run $\frac{1}{4}$ " connections and tie into $\frac{3}{8}$ " horizontal arms, which are to be run and connected to $\frac{1}{2}$ " risers, run to correspond with the steam risers. The $\frac{1}{2}$ " risers to continue to basement and there be connected with the 1" main, which is to run to correspond with the steam main. The 1" main is to be connected to a "Sparks" Automatic Vacuum Pump (located preferably in boiler or engine room) as directed.

All fittings used on air-line shall be galvanized. All piping to be reamed and joints put together with asphaltum, and when complete must stand a pressure test of 40 pounds per square inch through the entire heating system, including boilers, radiators, etc. Test to be made in the presence of the architect or engineer in charge.

Air Valves—Furnish and place on each radiator and coil one "Sparks" Automatic Air Valve and connect same as above specified. All valves to be adjusted by the contractor and so left by him.

Vacuum Pump—Furnish and place in boiler or engine room, where directed, one "Sparks" Automatic Vacuum Pump, of suitable capacity for handling.....sq. ft. of direct radiation and.....lin. ft. of fan coil heating. Make all necessary water, steam and other connections to the pump as directed and as required by the manufacturers. All such connections to be provided with the necessary cut-off and check valves.

The Vacuum Pump to be provided with one 5" compound gauge and one $3\frac{1}{2}$ " vacuum gauge, together with a card of directions and instructions showing how pump operates.

"SPARKS" AIR VALVES—Years of experience in vacuum heating have demonstrated that in order to produce the desired results a heating system must be equipped with an automatic air valve absolutely reliable when in operation. Knowing the difficulty of producing and the vital points necessary to a satisfactory valve of this kind, we decided to manufacture it ourselves. Judging from the tests and usage to which the "Sparks" valves have been subjected, we have every reason to believe that we have the most perfect automatic valve in use and will stand back of same with our guaranty.



"SPARKS" AIR VALVE

Continued on next page

INHERENT FEATURES—

First—A positive and uniform circulation of steam throughout the entire heating system at or below atmospheric pressure.

Second—Utilizing heat of steam at low temperatures, thereby gaining great economy.

Third—Warming without impairing the quality of the air in the room and without injuring carpets, decorations, etc.

Fourth—The independent and positive removal of the air and water of condensation from the heating apparatus.

Fifth—A sealed system; no leakage, no smell nor dripping from air valves.

Sixth—Low cost of maintenance.

Seventh—No power required to operate the system. Simply make connections and the pump does the rest.

Eighth—No starting nor stopping the pump, nor valves to open nor close, pump being absolutely automatic.

Ninth—No working parts to get out of order, nor requiring oiling nor attention of any kind.

Tenth—Heats up in less than half the time required for other systems.

Eleventh—Prolongs intervals between firing, thereby saving labor and coal.

Twelfth—Maintains heat during the night better and longer than other "vapor" or "vacuum" systems.

Thirteenth—Less steam used, less coal burned to heat a given space. The "Sparks" System produces the former and insures the latter.

Fourteenth—No royalty charges for its use.

We particularly desire a trial on Systems where any or all other known means for circulating steam have failed. The "Sparks" System has never failed. Increases efficiency without adding expense.

OUR ORGANIZATION—In all the principal centers of the United States we have branch offices or efficient representatives thoroughly competent to give engineering advice and information regarding the "Sparks" System. You will find that we have solved many of the problems that have been perplexing you. Our engineering department is one of the best equipped and is composed of a staff of engineers recognized as being at the head of their profession.

REFERENCES—

	Sq. Ft. Radiation
Metropolitan Building, St. Louis, Mo.	17,000
Chesterfield Apartment Building, St. Louis, Mo.	8,500
Humboldt Building, St. Louis, Mo.	6,500
Longfellow School, St. Paul, Minn.	8,000
Dundas Apartment, St. Louis, Mo.	7,500
Princess Theatre, St. Louis, Mo.	14,000
Alexian Bros. Hospital, St. Louis, Mo.	20,000
Association Hospital, St. Louis, Mo.	3,000
Haywood Apartment Building, St. Louis, Mo.	4,500
Kingsbury Apartment Building, St. Louis, Mo.	3,000
Declare Apartment and Stores, St. Louis, Mo.	5,000
Bloom Building, St. Louis, Mo.	6,000
American Car & Foundry Pattern Shop, St. Louis, Mo.	2,500
Dulce Building, St. Louis, Mo.	3,000
Herzog Building, St. Louis, Mo.	6,000
Ada High School, Ada, Okla.	6,500
Chromicle Building, Houston, Tex.	12,000
Sanguinet Apartment Building, Fort Worth, Tex.	3,200
Winfield Scott Building, Fort Worth, Tex.	2,500
First National Bank Building, Fort Smith, Ark.	8,000
Palace Building, Minneapolis, Minn.	12,000
Bry Block Dry Goods Company, Memphis, Tenn.	6,000
Chicora College, Greenville, S. C.	4,500
Catholic Church, Pierz, Minn.	3,000
High School Building, Frazer, Minn.	4,500
Board of Trade Building, Little Rock, Ark.	2,500
Panton Residence, Duluth, Minn.	1,500
High School, Edwardsville, Ill.	8,000
Richardson Flat Building, Washington, D. C.	4,500
St. Cloud Building, Spokane, Wash.	4,200
Shultz Dry Goods Company, Jefferson City, Mo.	1,800
M. K. & T. Depot, Parsons, Kan.	5,600
Milwaukee Normal School, Milwaukee, Wis.	30,000

"A.B.C." SYSTEMS



"SPARKS" AUTOMATIC VACUUM PUMP AND CONNECTIONS AND ACCESSORIES

Shirley Boiler and Radiator Co.

Manufacturers of
Boilers, Radiators, Tank Heaters, Etc.
BEECH GROVE, INDIANAPOLIS, IND.

PRODUCTS—A Complete Line of STEAM AND HOT-WATER BOILERS: HEAVY-DUTY, SECTIONAL, ROUND

STEAM AND HOT-WATER RADIATORS FOR DIRECT AND INDIRECT RADIATION, DIRECT-INDIRECT RADIATION, WALL RADIATION; TANK HEATERS AND LAUNDRY STOVES

"SHIRLEY" BOILERS—They are honestly rated, easy to install and operate. Requiring little attention and the minimum of fuel, they effect a large saving of time and coal.

"SHIRLEY" RADIATORS—Among the salient features of "Shirley" Radiators may be mentioned the following: 1. Increased air space in all these radiators, thus increasing greatly their efficiency. 2. Cleanliness and smoothness (inside and outside) of our castings. 3. Uniformity of design throughout each complete line of our Ornamental Radiators. 4. The completeness, in many styles, of our Plain Radiators. 5. The elegance of decoration of our Ornamental variety renders it superior in appearance to similar goods made elsewhere.

"SHIRLEY" WINDOW AND WALL RADIATORS—Made in one, two, three, and four column styles, they may be assembled in any size, as specified, of five-, seven- and nine-foot units.



"SHIRLEY" SQUARE SECTIONAL BOILER

Capacity:
 Steam, 750 to 3200 sq. ft.
 Water, 1250 to 5300 sq. ft.



"SHIRLEY" HEAVY-DUTY BOILER

Capacity:
 Steam, 3700 to 8600 sq. ft.
 Water, 6200 to 14325 sq. ft.



"SHIRLEY" ROUND BOILER

Capacity:
 Steam, 300 to 1075 sq. ft.
 Water, 500 to 1425 sq. ft.



FOUR COLUMN



THREE COLUMN



TWO COLUMN



ONE COLUMN

SIZES, DIMENSIONS AND RATINGS "SHIRLEY" RADIATORS
 HEATING SURFACE, SQUARE FEET



"SHIRLEY" WALL RADIATOR



"SHIRLEY" WINDOW RADIATOR

Number of Sections	Length,* Inches	HEIGHT, INCHES																									
		45	44	38				32				26				23	22	20				18	16	14			
		COLUMN																									
		2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	2	4	1	2	3	4	5	4	5	5	5
1	2½	5	6½	9	3	4	5	8	2½	3½	4½	6½	2	2½	3½	5½	2½	4	1½	2	2½	3½	5	3	4½	4	3½
2	5	10	13	18	6	8	10	16	5	6½	9	13½	4	5½	7½	10½	4½	8	3	4	5½	7½	10	6	9	8	7
3	7½	15	19½	27	9	12	15	24	7½	10	13½	20	6	8	11½	16	7	12	4½	6	8½	10½	15	9	13½	12	10½
4	10	20	26	36	12	16	20	32	10	13½	18	26½	8	10½	15	21½	9½	16	6	8	11	14	20	12	18	16	14
5	12½	25	32½	45	15	20	25	40	12½	16½	22½	33½	10	13½	18½	26½	11½	20	7½	10	13½	17	25	15	22½	20	17½
6	15	30	39	54	18	24	30	48	15	20	27	40	12	16	22½	32	14	24	9	12	16½	21	30	18	27	24	21
7	17½	35	45½	63	21	28	35	56	17½	23½	31½	46½	14	18½	26½	37½	16½	28	10½	14	19½	24½	35	21	31½	28	24
8	20	40	52	72	24	32	40	64	20	26½	36	53½	16	21½	30	42½	18½	32	12	16	22	28	40	24	36	32	28
9	22½	45	58½	81	27	36	45	72	22½	30	40½	60	18	24	33½	48	21	36	13½	18	24½	31½	45	27	40½	36	31½
10	25	50	65	90	30	40	50	80	25	33½	45	66½	20	26½	37½	53½	23½	40	15	20	27½	35	50	30	45	40	35

*In estimating length of radiator, allow ½ inch for each bushing.

"SHIRLEY" TANK HEATERS AND LAUNDRY STOVES—The capacity of our Tank Heaters ranges from 80 to 250 gals. Four sizes, height 26 to 36 inches. Prices, \$33.60 to \$54.30. When soft coal is to be used for fuel, a larger size heater is necessary.

GUARANTEE—We guarantee all our products to the Architects and Heating Engineers as well as to the trade.

ADAPTABILITY—"Shirley" Boilers and Radiators are adapted for all classes of buildings.

"A.B.C." SYSTEMS



TANK HEATER



LAUNDRY STOVE

Tank Capacity
 80 to 250 Gals. 80 to 150 Gals.

All "Shirley" Boilers and Radiators are made on short notice to meet any special requirements.

TESTS—These Boilers and Radiators are set up and subjected to a hydrostatic pressure test of 80 pounds per square inch, and are rigidly inspected in all details before shipment.

FACILITIES—Our Manufacturing facilities are such as to enable us to fill promptly orders of every size throughout the United States.

CO-OPERATIVE SERVICE—Special information and suggestions will gladly be furnished to Architects and Heating Engineers on application.

Monash-Younger Co.

ESTABLISHED 1889

Office and Factory

1407-1417 W. JACKSON BOULEVARD

CHICAGO, ILL.

NEW YORK OFFICE: 121 West 42d Street

PRODUCTS — "MONASH" STEAM SPECIALTIES;
"MONASH" RADIATOR SHIELDS



THE MONASH FOUR-WAY-DRAIN BRAND

OUR GUARANTEE—This valve is guaranteed in the hands of the user for FIVE YEARS. Such a guarantee in writing will be given direct to your client when desired.

Observe the shape; note that this valve is made with **hexagon top (K)** and **hexagon base (B)** to distinguish it at a glance from all other air valves on the market and protect the specifying Architect or Engineer against substitution.

The **Four-Way-Drain (G)** extends from the body of the valve into the radiator, clearing the valve of core sand and other foreign substances. It drains off the water of condensation, returning it to the radiator; therefore the valve is self-cleaning, a feature not contained in the construction of any other brand of valves.

The special air tube **(D)** extends above the top of the float, conducting the air from the radiator and permitting it to escape through the opening in the screw **(E)**. This causes a circulation and compels the water to flow back into the radiator by means of the **Four-Way-Drain**.

The expansion member **(F)** is constructed in pyramid form of a special composition known only to ourselves. This composition allows for expansion from heat and contraction from cool air. Its life cannot be exhausted in twenty years.

The valve can only be adjusted with the special key furnished for that purpose. This prevents tampering with the valve.

The interior construction of the **Monash Four-Way-Drain Brand of Valves**, for **Low-Pressure Gravity Heating Systems**, is identical in every respect. They have been on the market for a great many years, have stood the test of time and are therefore no experiment.

They are constructed with all working parts above the opening to the radiator, preventing core sand and dirt from lodging in the valve and making it inoperative. They will automatically vent the radiator, close when water begins to flow, prevent steam from escaping and are guaranteed to give satisfaction.

Open sample, mounted as a paper weight, will be furnished on application to specifying Architects and Heating Engineers.

The eight different styles of the **Four-Way-Drain Brand** are classified according to their special features.

In specifying this brand of valves the specification covering the **Monash Four-Way-Drain No. 6** should be used, substituting in each case the particular style number of valve desired.



HOW TO SPECIFY—Each radiator to have a Monash Four-Way Drain No. 6 automatic steam air valve attached.

WITH ORDINARY CARE THIS VALVE SHOULD LAST TWENTY YEARS

THE MONASH NO. 1 FOUR-WAY-DRAIN VALVE—
Made with a protecting cap so that the valve can be adjusted with a screw-driver.

THE MONASH NO. 2 FOUR-WAY-DRAIN VALVE WITH HEAT-CONTROLLER ATTACHMENT— By operating the controlling disc, at the top of this valve, the heat may be confined to any number of sections in the radiator.

This feature will be found very useful in controlling the heat in mild weather, for, by operating the controlling disc, it will be unnecessary to turn on or off the radiator supply valve to give the degree of heat desired.

THE MONASH NO. 3 FOUR-WAY-DRAIN VALVE—
Used on coils, is identical in every respect to the No. 1 with the exception that it is made with bottom-outlet connection.

THE MONASH NO. 4 FOUR-WAY-DRAIN VALVE—
Equipped with an air outlet pipe, which prevents the offensive odor escaping from the radiator from being discharged into the room. We recommend this valve for fine residence work.

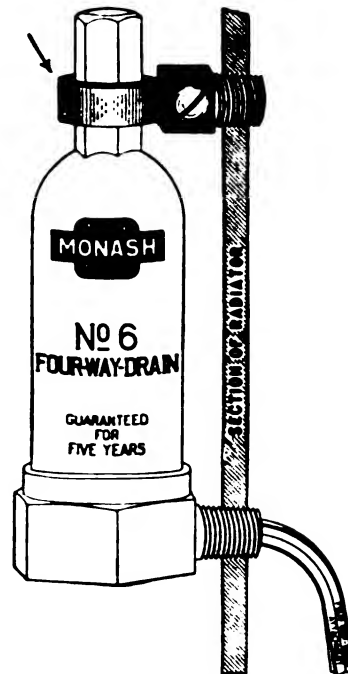
THE MONASH NO. 6 FOUR-WAY-DRAIN VALVE—
Made with a lock shield and special key for adjustment, preventing unauthorized persons from tampering with the valve. To guard against substitution it is made with hexagon top and base.

The Monash No. 6 has been specified by Architects for a great many years. It is specially recommended for high-class work where a thoroughly efficient, reliable valve is required. This valve is also made with bottom-outlet connection.

THE MONASH NO. 7 FOUR-WAY-DRAIN VACUUM VALVE— Identical in every respect to the No. 6 with the added commendable feature of a vacuum cap which prevents the cold air from being drawn into the radiator.

All air valves allow the air to be drawn back into the radiator through the opening in the screw at the top of the valve, and it is this air which causes the radiator to cool off quickly.

The Vacuum Feature of this valve consists of a composition disc which seats itself over the opening in the screw, preventing the air from entering, thereby making it possible to hold a vacuum in the radiator, thus retaining the heat after the fire has been banked, insuring a comfortable night and a material reduction of fuel bills.



SHOWING MANNER OF FASTENING VALVE TO RADIATOR WITH MONASH VALVE HOLDER



PAT. OCT. 2, 1906
ACTUAL SIZE OF MONASH VALVE HOLDER

THE MONASH VALVE HOLDER— Used on Lock Shield Valves only.

This device prevents the valve from being turned or removed from the radiator. It is specially designed for use in schools and all classes of public buildings.

HOW TO SPECIFY—"Each radiator to be equipped with a MONASH FOUR-WAY-DRAIN No. 6 VALVE and MONASH VALVE HOLDER to prevent removal of valve from radiator."

MONASH NO. 9 AUTOMATIC AIR VALVE—For Hot-water Systems. The only Automatic Hot-water Air Valve on the market.

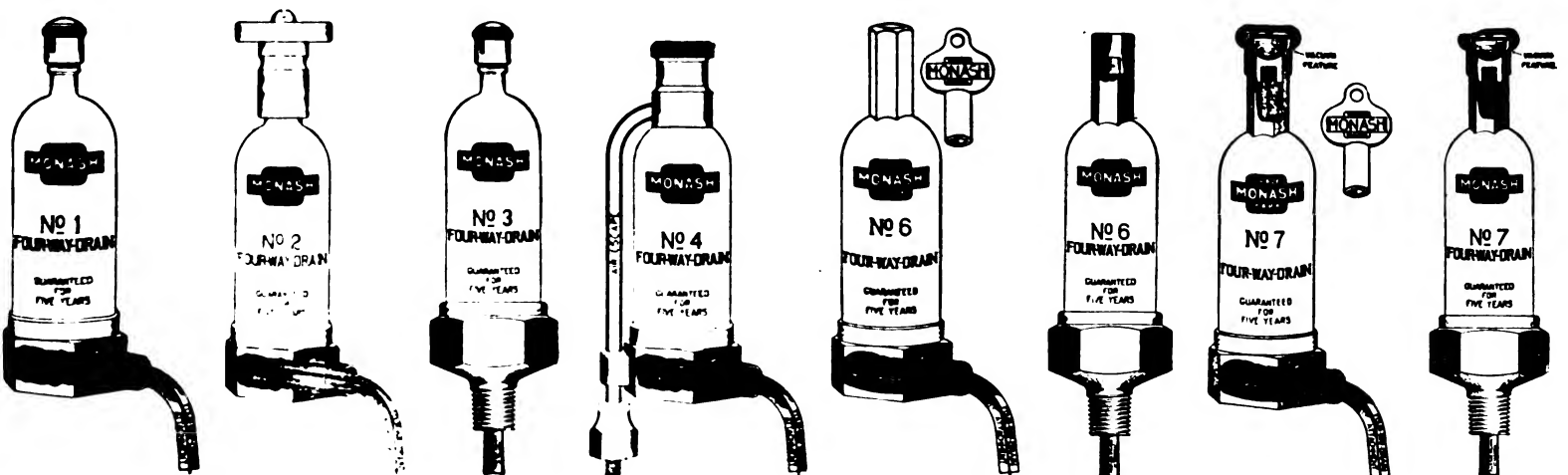
This valve will automatically discharge the air as it accumulates, causing a constant circulation of hot water, thereby maintaining an even temperature at all times.

Open sample showing interior construction mailed on application to specifying Architects and Heating Engineers.



MONASH NO. 9 AUTOMATIC AIR VALVE

HOW TO SPECIFY—"Each radiator to have a MONASH NO. 9 AUTOMATIC HOT-WATER AIR VALVE attached."



"ABC" SYSTEMS

Continued on next page

THE PERFECTED DUPLEX BRAND—This brand of Automatic Steam Air Valves has been on the market for a great many years. It is less expensive than the Monash Four-Way-Drain Brand, but will give excellent results.

These valves are constructed with all working parts *above* the opening to the radiator, preventing core sand and dirt lodging in the valve and making it inoperative.

THE PERFECTED DUPLEX NO. 1—Made with a protecting cap so that the valve can be adjusted with a screw-driver.

THE PERFECTED DUPLEX NO. 3—Used on coils, is identical in every respect to the No. 1 with the exception that it is made with bottom-outlet connection.

THE PERFECTED DUPLEX NO. 6—Equipped with a lock shield and special key for adjustment. It is recommended where an efficient valve at moderate cost is desired. This valve is also made with bottom-outlet connection.

In specifying this brand of valves the specification given below covering the perfected Duplex No. 6 should be used, substituting in each case the particular style number of valve desired.

HOW TO SPECIFY—"Each radiator to have a **PERFECTED DUPLEX NO. 6 AUTOMATIC STEAM AIR VALVE** attached.



THE ATLAS SYPHON—This is the lowest-cost valve that can be relied upon. It has given excellent results, and we can highly recommend it where an inexpensive but efficient valve is required. The Atlas Syphon is constructed with all working parts *above* the opening to the radiator, preventing core sand and dirt from lodging in the valve and making it inoperative.



HOW TO SPECIFY—"Each radiator to have an **ATLAS SYPHON AUTOMATIC STEAM AIR VALVE** attached."

"A.B.C." SYSTEMS

MONASH "TELWEN" AUTOMATIC STEAM AIR VALVE—For Air Line or Vacuum Systems. The "Telwen" feature at the top of the valve "tells when" the valve is properly adjusted, as it enables one to tell at a glance whether the screw binds. As soon as the proper adjustment has been accomplished, the "Telwen" compresses the compensating spring concealed in the screw, thus throwing the screw-driver out of the slot of the screw, thereby preventing the buckling or bending of the expansion member by undue pressure.



FIG. A. ACTUAL SIZE OF "TELWEN" FEATURE

Fig. A shows the "Telwen" compressing the compensating spring which forces the screw-driver out of the slot of the hollow screw.

After a proper adjustment of the valve, **no connection need ever be broken or disturbed**, as the adjustment of the valve is accomplished by the manipulation of the screw in the top of the valve.

Once adjusted this valve will operate on high as well as low pressure without danger of injury, as the compensating spring takes the tension off the expansion member.

MADE IN FOLLOWING SIZES:

No. 1 "Telwen," $\frac{1}{4}$ " to radiator, $\frac{1}{8}$ " and $\frac{3}{16}$ " union connection.
No. 3 "Telwen," $\frac{1}{4}$ " to radiator, $\frac{1}{4}$ " and $\frac{3}{8}$ " union connection.

Open Sample, mounted as a paper weight, will be furnished on application to specifying Architects and Heating Engineers.

HOW TO SPECIFY—"Each radiator to be provided with a **MONASH 'TELWEN' NO. ... AUTOMATIC STEAM AIR VALVE.**"

MONASH NO. 7 "TELWEN" AUTOMATIC STEAM MAIN VENT—This large and powerful Air Vent, 8 inches long by $1\frac{1}{8}$ inches in diameter, with $\frac{3}{4}$ -inch pipe inlet and outlet connections, is made for the purpose of relieving the **steam mains or risers** of air as it accumulates, thereby saving a vast amount of steam which would otherwise go to waste. The adjustment of the valve is accomplished by the manipulation of the screw, so that at no time is it necessary to disturb any connection of this valve. Simply remove the cap at the top of the vent with a wrench, and the adjustment of the screw can be accomplished. Once adjusted this valve will operate on high as well as low pressure without danger of injury to the valve, as the compensating spring takes the tension off the expansion post. The interior construction of the MONASH NO. 7 "TELWEN" is built on the same principle as the "Telwen" No. 1 and No. 3 Valves.



HOW TO SPECIFY—"Risers and Mains to be vented with **MONASH NO. 7 'TELWEN' AUTOMATIC STEAM MAIN VENT.**"

Continued on next page

MONASH NO. 10 EXPANSION AIR VALVE
—An expansion valve where the adjusting screw is concealed within the union. This valve is recommended for systems where an efficient Drip-Line Valve at moderate cost is required. It has been on the market for a number of years and has given excellent results.



HOW TO SPECIFY—"Each radiator to have a MONASH NO. 10 EXPANSION AIR VALVE attached."

MONASH NO. 8 AUTOMATIC EXPANSION AIR VALVE with UNION DRIP CONNECTION—For steam radiators and heating coils.

This valve is of small design, taking up no more room than an ordinary air cock. Simple, sensitive and durable. An inexpensive valve, on the market for a number of years and giving excellent results.

MADE IN THE FOLLOWING SIZES: $\frac{1}{8}$ " x $\frac{1}{8}$ " and $\frac{1}{8}$ " x $\frac{1}{4}$ ".



HOW TO SPECIFY—"Each radiator to have a MONASH NO. 8 AUTOMATIC EXPANSION AIR VALVE attached."

MONASH NO. 8 AUTOMATIC EXPANSION AIR VALVE

MONASH NO. 13 TRAP—A small and simple steam trap, 4 inches long, specially made for use on indirect radiators, steam-heating coils, steam kettles and other places where there is a small amount of condensation to be removed without waste of steam. It is perfectly automatic, and when properly adjusted will remain open as long as air and water escape, closing instantly when steam strikes the expansion plug.

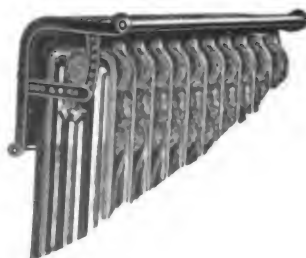


MONASH NO. 13 TRAP

This valve is made with a very large chamber surrounding the expansion plug so as to permit an easy escape of air and water of condensation. The expansion plug is made of a special composition, and the construction of the seat is such that the expansion member will seat itself very tight and is not liable to bend or buckle.

HOW TO SPECIFY—"Each indirect radiator, kettle or steam jacket to have a MONASH NO. 13 TRAP attached."

MONASH ADJUSTABLE RADIATOR SHIELDS—A practical, adjustable shield, easily attached. No portion of the radiating surface is enclosed; the maximum emission and widest distribution of radiant heat is always obtained from the radiator by using this shield. They are made of cold-rolled smooth sheet steel.



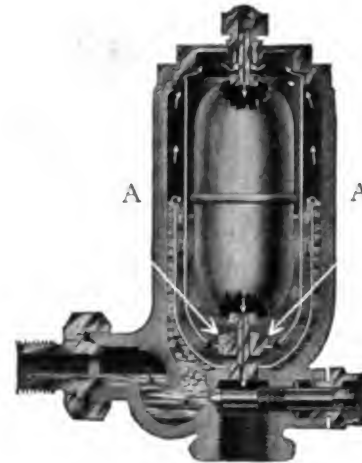
MONASH STYLE A-1 ADJUSTABLE RADIATOR SHIELD

HOW TO SPECIFY—"Each radiator to have a MONASH STYLE A-1 ADJUSTABLE RADIATOR SHIELD attached."

"A.B.C." SYSTEMS



MONASH NOISELESS RADIFIER VALVE—Unequaled for Vacuum Heating Systems—**GUARANTEED IN WRITING**—THE MONASH NOISELESS RADIFIER is the only valve of its type that is absolutely noiseless, the float (A) being incased in a separate chamber containing a still body of water, which prevents the chattering of the float by the inrush of steam or water directly on to the float.



MONASH NOISELESS RADIFIER

It is adapted to all classes of buildings, and can be used on every type of heating apparatus using steam as a heating medium where a Vacuum Pump is employed on the return end. It is specially recommended where elimination of noise in the heating plant is desired.

The **MONASH NOISELESS RADIFIER** is non-thermostatic, non-adjustable, positively automatic; will not leak steam; provides for a continuous, automatic removal of air, and will adjust itself to all varying conditions without any attention whatever.

Architects and Heating Engineers who are interested in specifying an absolutely noiseless system of vacuum heating, will be furnished our book of blueprints showing typical installations.



SIX SIZES—MONASH RADIFIER VALVES

HOW TO SPECIFY—"The system of heating to be MONASH NOISELESS SYSTEM OF VACUUM HEATING. All connections from heating main or units of radiation to be protected by MONASH NOISELESS RADIFIER or DRAIN TRAP, sizes as shown on plans."

Continued on next page

MONASH CLASS C-1 AND C-2 PRESSURE REGULATING VALVES—Designed for Vacuum or Low-Pressure Heating Systems.

These valves will reduce the pressure from 125 pounds per square inch down to atmospheric pressure or below if desired, but cannot be used where the reduced pressure required is above 10 pounds.

They are made in standard sizes, as listed, and in special sizes to order only.

CLASS C-1

Size of Regulator	Length of Regulator, Face to Face, Inches
1½ x 2½	6½
1½ x 3	7½
2 x 4	8½
2½ x 5	9
3 x 6	10½
3½ x 7	11
4 x 8	12½
5 x 10	13½
6 x 12	14½
8 x 14	17½
8 x 16	17½

Sizes up to and including 2x4 in. are made with screwed inlet and flanged outlet. All larger valves have both ends flanged.



CLASS C-1

CLASS C-2

Size of Regulator	Length of Regulator, Face to Face, Inches
¾ x ¾	4½
1 x 1	4½
1½ x 1½	4½
1½ x 2	5½
2 x 2	6
2½ x 2½	7½
3 x 3	8½
3½ x 3½	9½
4 x 4	10½
5 x 5	11½
6 x 6	12½
7 x 7	14½
8 x 8	16
10 x 10	18½
12 x 12	21
14 x 14	23

Sizes up to and including 2½x2½ in. are made with screwed ends. All larger valves have both ends flanged.



CLASS C-2

CLASS B-2

Size of Regulator	Length of Regulator, Face to Face, Inches
¾ x ¾	4½
1 x 1	4½
1½ x 1½	5
1½ x 2	6½
2 x 2	7½
2½ x 2½	8½
3 x 3	10
3½ x 3½	11
4 x 4	12
5 x 5	13½
6 x 6	14½
7 x 7	15½
8 x 8	16½
10 x 10	19½

Sizes up to and including 2½x2½ in. are made with screwed ends. All larger valves have both ends flanged.



CLASS B-2

Extra Heavy Pressure Regulating Valve used on high pressure up to 250 pounds

MONASH CLASS A-2 PRESSURE REGULATING VALVE—Recommended for all service where the steam that passes through the valve is not subjected to any pulsation or vibration.

Made in standard sizes, as listed, and in special sizes to order only.

CLASS A-2

Size of Regulator	Length of Regulator, Face to Face, Inches
¾ x ¾	4½
1 x 1	4½
1½ x 1½	4½
1½ x 2	5½
2 x 2	6
2½ x 2½	7½
3 x 3	8½
3½ x 3½	9½
4 x 4	10½
5 x 5	11½
6 x 6	12½
7 x 7	14½
8 x 8	16
10 x 10	18½

Sizes up to and including 2½x2½ in. are made with screwed ends. All larger valves have both ends flanged.



CLASS A-2

MONASH CLASS B-1 AND B-2 PRESSURE REGULATING VALVES—Recommended for all service where the steam that passes through the valve is subjected to rapid pulsation or vibration.

They are made in standard sizes, as listed, and in special sizes to order only.

CLASS B-1

Size of Regulator	Length of Regulator, Face to Face, Inches
¾ x ¾	4½
1 x 1	4½
1½ x 1½	4½
1½ x 2	5½
2 x 2	6
2½ x 2½	7½
3 x 3	8½
3½ x 3½	9½
4 x 4	10½
5 x 5	11½
6 x 6	12½
7 x 7	14½
8 x 8	16
10 x 10	18½

Sizes up to and including 2½x2½ in. are made with screwed ends. All larger valves have both ends flanged.



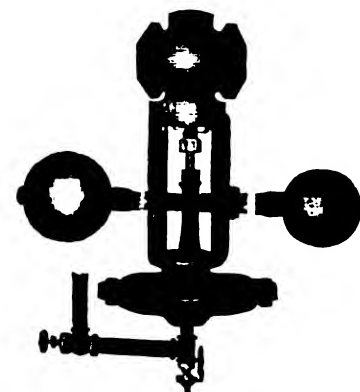
CLASS B-1

For Pressure from 125 pounds down to atmosphere.

MONASH VACUUM PUMP GOVERNOR

Size of Governor	Length of Governor, Face to Face, Inches
¾ x ¾	4½
1 x 1	4½
1½ x 1½	4½
1½ x 2	5½
2 x 2	6
2½ x 2½	7½
3 x 3	8½

Sizes up to and including 2½x2½ in. are made with screwed ends. The 3x3 in. are made with both ends flanged.



MONASH VACUUM PUMP GOVERNOR

Electric Heat Regulator Company

MINNEAPOLIS, MINN.

PRODUCTS—MINNEAPOLIS HEAT REGULATOR, with and without TIME ATTACHMENT; MINNEAPOLIS HOT WATER TANK OR BOILER REGULATOR; THERMOMETERS, STEAM AND NATURAL GAS VALVES

MINNEAPOLIS HEAT REGULATOR—Consists of a Thermostat (mechanical thermometer), a Motor and two cells of Open-Circuit Battery.

What the Regulator Will Do—It will keep the house at an even temperature, save coal, prevent destruction of property by fire, and prolong the life of a heater. It will relieve the mind entirely of the care of the draft dampers, and of the fear that at night, or during absence for a few hours, there is danger to life or property through neglect of the heater. It will demonstrate that no heating plant can be complete without it.

The Regulator will control Hot-Water, Steam, Hot-Air and Combination Heaters.

THE THERMOSTAT—The Thermostat, or mechanical thermometer, by its action, controls the operation of the whole mechanism of the Regulator. The Thermostat is made with or without a Time Attachment, as illustrated.

MODE OF ACTION—When the coil at the top of the Thermostat is exposed to a change of temperature, it expands or contracts, creating a motion which is imparted to the projecting arm, and closes the electric circuit by forming a contact with one of the posts at the lower end. As the circuit is closed, an electric current flows through the magnets of the motor, releases the brake—and the driving shaft of the motor makes a half revolution. The Thermostat is protected by an ornamental metal screen having upon its face an accurate thermometer, and is nicely finished in bronze. It should be located in the living room at an average temperature point. All the other parts of the device are located in the basement.

TIME ATTACHMENT FOR THERMOSTAT—Consists of a reliable clock mounted in connection with the Thermostat, and of similar finish.

The Time Attachment will change point of temperature control at any pre-determined hour. With the Time Attachment the pointer of Thermostat may be set to any lower degree and the alarm hand of clock set at any hour when temperature is desired to be changed. The pointer will at that hour *automatically and silently* move to 70, the Thermostat being always in control and never "cut out." Our attachment is mechanically accurate, very simple and a perfect time controller.

MOTOR—(NEW MODEL)—Our New Motor is encased in a solid, pressed steel cover, No. 22 gauge, finished in black enamel (baked).

Winding Index—There is an index finger with scale (A), which travels

as the motor is wound and unwound; a glance at the motor showing at all times the condition in reference to winding.

Dustproof—The cover is dustproof, cotton sleeving being used at the shaft (B).

Basement Switch—The motor is also provided with basement switch (C) by means of which the motor can be operated in the basement at will.

Easily wound by means of new-pattern crank key.

All of our motors *automatically*, when *run down*, leave the drafts closed. The parts of motor are of pressed steel and brass (no cast iron); the bearings are lathe-turned, running in brass bushings, as finely adjusted and fitted as the very best clock made.

NOTE—All parts of our motors are made in our own factories, including the cutting of all gears, manufacturing of our own magnets, etc., ensuring perfect work and adjustment.

PRICE LIST OF MINNEAPOLIS HEAT REGULATOR

Shipping weight approximately 30 pounds each. Book of directions for installing with each Regulator.

Minneapolis Heat Regulator, complete	\$40.00
(Includes wire, batteries, all hardware, complete, ready to install.)	
Minneapolis Heat Regulator and Time Attachment	47.00
(Includes wire, batteries, all hardware, complete, ready to install.)	
Time Attachment Thermostat only	24.00
Minneapolis Hot Water "Tank" or "Boiler" Regulator No. 10	50.00

NOTE: Regulators can be readily applied to any style heater, the cost of application depending upon the size and style of heating apparatus.

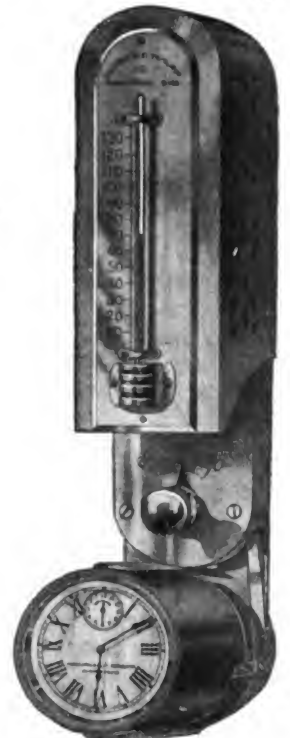
GUARANTEE—Any device mechanically defective will be made good upon return of same to factory, transportation charges prepaid, without charge. The manufacturers guarantee further that these regulators, installed according to the book of directions, will operate dampers on a change of two degrees or less.

Any device sold by a dealer to a consumer proving unsatisfactory, dealer is to immediately notify manufacturers; and, if device cannot be made satisfactory by us, we agree to allow it to be returned at our expense for return charges only, and will promptly refund purchase price.

REPAIRS—Repairs will be made without charge if resulting from any mechanical defect at any time. Cost of materials and time only will be charged otherwise. Send charges prepaid, with name and address of sender on package, and send transportation receipt by mail.



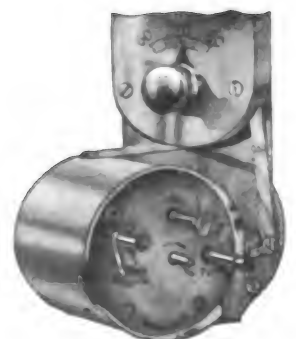
MOTOR



TIME ATTACHMENT THERMOSTAT

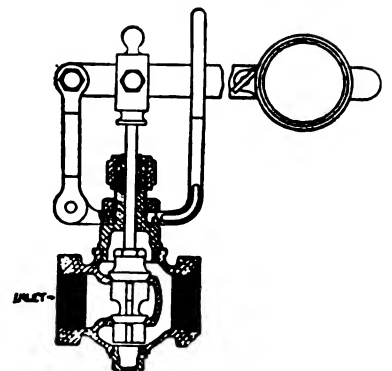


THERMOSTAT WITH SCREEN REMOVED AND WITHOUT TIME ATTACHMENT



LATEST MODEL 1911 TIME ATTACHMENT

Clock swings complete circle to wind in any position. All actions wind with same key. Clock Detachable.



GAS VALVE

The Dole Valve Company

206 FIFTH AVENUE
CHICAGO, ILL.

Iroquois Engineering Co.
CHICAGO, MINNEAPOLIS, ST. LOUIS, COLUMBUS
Exclusive Distributors of "Dole" Packless Valve
FOR CENTRAL, MIDDLE WEST AND SOUTHERN STATES
Address All Communications to Nearest Branch House

PRODUCTS—"DOLE" BALL-BEARING PACKLESS RADIATOR VALVE (formerly known as the "E. P. Allen"), AND THE "DOLE" AUTOMATIC AIR VALVE

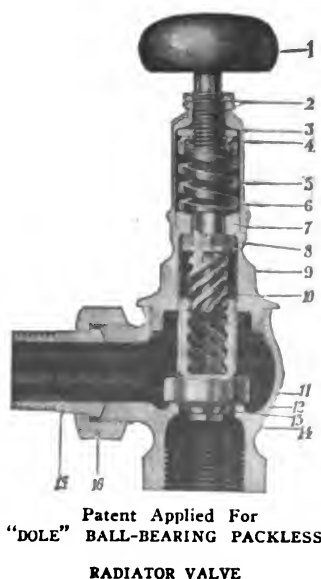
piece Stem; (11) Disc Holder; (12) Bottom or Main Disc—best that money and brains can produce; (13) Tapered Disc Nut; (14) Valve Body—extra-heavy standard threads; best steam metal; (15) Tail Piece—makes up absolutely tight; (16) Union Nut.

THE "DOLE" BALL-BEARING PACKLESS RADIATOR VALVE—In presenting this valve to Architects, Engineers and the trade it is scarcely necessary to call attention to the constantly increasing demand for a perfect packless valve to supplant the old-style valve which has given such unsatisfactory service in the past. And, we cannot escape the conclusion that the reason why the "Dole" valve is being specified so increasingly to-day is that it is found to be in every way eminently suited to the work for which it is designed.

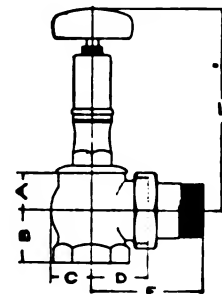
The "Dole" Packless Valves have successfully won the race against an army of troublesome, leaky and in every way unsatisfactory old-style valves, inferior in design and workmanship. Our valves are now specified without exception wherever their merits have become known. They perform their duties without default and have proven their capacity to do all that is claimed for them.

It is, therefore, no longer necessary to install valves of the old style that leak, "wheeze" and blow hot water over walls and floors and require frequent expensive repairs. The "Dole" Ball-bearing, Quick-opening, Packless Radiator Valve relieves all this trouble permanently.

SIXTEEN REASONS — The points of advantage in the "Dole" Valve are many. We show here a sectional drawing illustrating sixteen of the most essential points. Enumerated, they are: (1) Patented Wood Handle—extra strong; (2) Double Lock Nut—prevents accidental compression loosening of seat; (3) Upper Bearing for Balls adjustable—prevents loss of tension in spring; (4) Ball Bearings—easy-turning, self-locking; (5) Spiral Steel Spring—75-lb. tension; (6) Dustproof Nickel-plated Cap—covering vital points; (7) Double Shoulders—positively prevent leakage of air, steam or water; (8) Packless Disc—special composition; (9) Hub; (10) One-

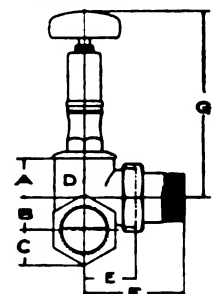


DIMENSIONS OF DOLE VALVES



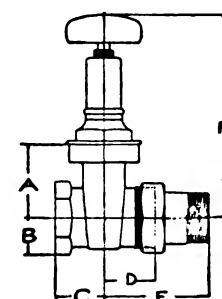
PACKLESS RADIATOR VALVE
Angle Type

Size	A	B	C	D	E	F
1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2 1/2"	5 1/2"
1 1/2"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	3"	6 1/2"
1 3/4"	1 7/8"	1 7/8"	1 7/8"	1 7/8"	3 1/2"	6 3/4"
1 7/8"	2"	2"	2"	2"	3 3/4"	6 7/8"
2"	2 1/8"	2 1/8"	2 1/8"	2 1/8"	4"	7 1/8"



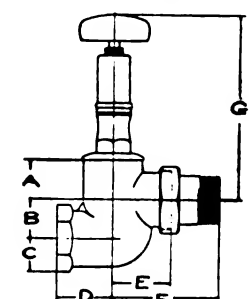
PACKLESS RADIATOR VALVE
Right and Left Hand, Corner Type

Size	A	B	C	D	E	F	G
1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2 1/2"	6 1/2"
1 1/2"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	3"	6 1/2"
1 3/4"	1 7/8"	1 7/8"	1 7/8"	1 7/8"	1 7/8"	3 1/2"	6 3/4"
1 7/8"	2"	2"	2"	2"	2"	3 3/4"	6 7/8"
2"	2 1/8"	2 1/8"	2 1/8"	2 1/8"	2 1/8"	4"	7 1/8"



PACKLESS RADIATOR VALVE
Gate Type, with Union

Size	A	B	C	D	E	F
1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	3 1/4"	6 1/2"
1 1/2"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	3 3/4"	6 3/4"
1 3/4"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3 3/4"	7 1/4"
2"	3 1/4"	3 1/4"	3 1/4"	3 1/4"	4 1/4"	7 1/2"



PACKLESS RADIATOR VALVE
Back Offset Type, with Union

Size	A	B	C	D	E	F	G
1 1/2"	1 3/4"	1 3/4"	1 3/4"	2"	2"	3 1/4"	6 3/4"
1 3/4"	2"	2"	2"	2 1/4"	2 1/4"	4 1/4"	6 3/4"
2"	2 1/8"	2 1/8"	2 1/8"	2 1/8"	2 1/8"	4 1/4"	7 1/8"

PRICES OF PACKLESS RADIATOR VALVE, ANGLE TYPE
Rough Body, Nickel-Plated All Over

$\frac{1}{2}$ in.	$\frac{3}{4}$ in.	1 in.	1 $\frac{1}{2}$ in.	1 $\frac{3}{4}$ in.	2 in.
\$3.90	\$3.90	\$4.70	\$6.25	\$8.15	\$13.00

PRICES OF PACKLESS RADIATOR VALVE, RIGHT AND LEFT HAND, CORNER TYPE
Rough Body, Nickel-Plated All Over

$\frac{1}{2}$ in.	1 in.	1 $\frac{1}{2}$ in.	1 $\frac{3}{4}$ in.	2 in.
\$4.25	\$5.15	\$6.95	\$8.95	\$14.25

PRICES OF PACKLESS RADIATOR VALVE, GATE TYPE, WITH UNION
Rough Body, Nickel-Plated All Over

$\frac{1}{2}$ in.	1 in.	1 $\frac{1}{2}$ in.	1 $\frac{3}{4}$ in.	2 in.
\$4.05	\$5.30	\$6.75	\$8.25	\$11.90

PRICES OF PACKLESS RADIATOR VALVE, BACK OFFSET TYPE, WITH UNION
Rough Body, Nickel-Plated All Over

$\frac{1}{2}$ in.	1 in.	1 $\frac{1}{2}$ in.	1 $\frac{3}{4}$ in.	2 in.
\$4.25	\$5.15	\$6.95	\$8.95	\$14.25

SPECIFICATION—Radiator Valves—The Contractor shall furnish and install on each and every radiator and coil connected with the plant the "Dole" Ball-Bearing, Quick-Opening, Packless Radiator Valve. Valves to be constructed of best steam metal, rough bodies, nickel-plated all over and with wood handles, and must be guaranteed by the manufacturer to be perfect in operation and not to leak either steam, water or air in any of their joints.



"DOLE" LOCK-SHIELD VALVE
Same price as Wood-Wheel Valves, Keys Extra

THE "DOLE" AUTOMATIC AIR VALVE

Founded on scientific principles. Simple but perfect in its construction. All-metal and non-adjustable. No expansion post. No ring. No spring. No packing. Nothing to get out of order.

By referring to the sectional cuts shown herewith the full action of this valve can be easily understood and its advantages over all other so-called "automatic" air valves fully appreciated. The first cut shows the valve open; the other section shows the valve closed, the water in the lower section, and the valve forced to its seat, sealing the outlet.

OPERATION—The full operation of The "Dole" Automatic Air Valve is as follows: The pressure of the steam naturally expels the air from the heating system through the upper tube or radiator of the valve and thence to the atmosphere. As soon as the steam reaches the valve it at once heats the tube radiator, thus expanding the air in the upper section and forcing the water into the lower part of the valve, raising the float to its seat and sealing the valve.

Note—When first attached to the radiator, naturally a little steam will blow from the valve until sufficient water has condensed to raise the float to its seat. After the first operation, however, the action of the valve is almost instantaneous.

As soon as the valve has been closed, the upper section begins to cool off and, the air being expanded in this section, a partial vacuum is formed which draws the water from the lower part to the upper section, allowing the float to fall and the valve to open. Any accumulation of air in the radiator will now be forced out and, the steam again heating the tube radiator in the upper section, the water will immediately be forced by the expansion of air to the lower part of the valve, raising the float and sealing the outlet.

The almost instantaneous action of this valve in response to the principles of expansion and contraction of air causes it to open and close automatically with such precision as to make it a positively intermittent valve more than human in its reliability of action. The "Dole" valve is in a sphere of its own. A simple trial is all that is necessary to prove its superior worth.

RESERVE WELL—Particular attention is called to the reserve well in The "Dole" Automatic Air Valve. This is a new and valuable feature and one that will be appreciated at once by the practical man. Sufficient water is retained at all times in this well to prevent evaporation, and, the inlet being below the line of flotation, it in no way interferes with the valve opening and closing automatically as the condition of the system may demand.



Valve Open



Valve Closed

"DOLE" AUTOMATIC AIR VALVE
Patent Applied For

On the bottom of each valve is a cleanout cap which allows the easy removal of any dirt or foreign matter that may accumulate in the course of time.

Note.—Look for the name "Dole" on every valve. It is a guarantee of satisfaction.

Price, \$1.00 Each. Discounts to the trade.

W. H. Johnson and Son Company

Manufacturers of

Acme Radiator and Register Shields and Acme Steam-Pipe Sleeves

943 AND 945 FORT WAYNE AVENUE
INDIANAPOLIS, IND.

PRODUCTS—ACME RADIATOR SHIELDS, ACME REGISTER SHIELDS, AND ACME STEAM-PIPE SLEEVES

amount of moisture in the air is essential to life. The Acme Shield Water Pan provides this moisture in the most satisfactory manner.

GENERAL DESCRIPTION—Acme Shields for steam and hot-water radiators and for setting over hot-air registers are designed to protect the walls, ceiling, draperies, etc., from being soiled and blackened by the dust and smoke arising with the heat and stained and seared by the heat itself. Acme Shields are furnished in plain and ornamental designs of several patterns and finished in bronze in several shades to harmonize with the furnishings of any room in the finest residences, hotels and apartment houses. They are an ornament in addition to being an object of usefulness. They are applicable, likewise, in office structures and public buildings, made to fit all sizes and styles of radiators and hot-air registers.

ACME RADIATOR SHIELDS—The material used is corrugated galvanized iron. The shields are fitted with a dust retainer from which the dust caught is easily removed, at intervals, by passing a damp cloth through the retainer.

These shields are equipped with or without an invisible water pan, formed in the top part of the shield. This pan is of copper, with a perforated removable lid, and runs the full length of the radiator, exposing a large thin surface to the direct action of the heat, which, evaporating the water, rapidly supplies that requisite amount of moisture which is conceded to be necessary for the health and comfort of the occupants of any room.

The Apron at the lower edge of the Acme Shields has a felt strip attached which takes up any unevenness of the wall and makes a perfectly dust-tight joint; but if there are any pipes immediately in the rear of the radiator or any unevenness caused by projections or panelings which would prevent the lower felt edge fitting closely to wall, we make an apron extension down to the floor to obviate this difficulty.

ACME REGISTER SHIELDS—These are designed for hot-air floor registers, whether for furnace heating or indirect-steam or hot-water heating. They are made in two styles: No. 1 is fitted with a dust gutter only and No. 2 has both the dust gutter and water pan. All the general features of design and object are the same as described for the Radiator Shields.

As stated previously, the air in houses artificially heated is generally very dry and therefore unwholesome, because a certain

ORDERING SHIELDS—If for steam or hot-water radiators, state the make of radiator, if possible, and whether water pan is desired. State whether there are any pipes or uneven places on the wall behind the radiator to prevent the lower edge of the apron from fitting closely to wall. State the measurements, in inches, of each radiator, giving the length and width and also the width of the space between wall face and radiator. Also state the height of the radiator in case an apron extension to the floor should be required.

If for hot-air floor registers, furnace or indirect heating, state size of register including the border.

ACME STEAM-PIPE SLEEVES—Designed for inclosing and insulating steam and hot-water heating pipes through the body of floors and partitions. They are constructed like a telescope to admit of an adjustment of from 10½ to 17 inches. The principle of construction in the Acme Sleeve is different from that in any other heating-pipe sleeve on the market.

OPERATION—There is an outer section of spirally corrugated galvanized iron, which has a groove or slot running the full length of the sleeve on the inside thereof. An inner section of smooth iron has a raised rib or key which slips into the groove of the outer section down to the proper level, at which point a half turn to the right sets the sleeve firmly in place.

The corrugations of the outer sections are spiral, like the threads of a screw, so that the further the inner section is turned to the right the tighter the sleeve is set in place.

ADVANTAGES—ACME sleeves cannot slip from place; have no set screws, running threads or iron strips in their construction, and are a time saver in setting.

Our cast floor and ceiling plates are neat in design and give a finished appearance to the sleeves.

PRICES AND SIZES
OF SLEEVES

Size of Pipe	Price Each
1½"	\$1.00
1"	1.00
1"	1.00
1½"	1.30
1½"	1.50
2"	1.80
2½"	2.10
3"	2.50
3½"	3.00
4"	3.75
5"	4.50
6"	5.25

Minimum length, 10½"
Maximum length, 17"

The Triumph Valve Company

Manufacturers of Packless Radiator Valves

Main Office and Factory

230 NORTH ADAMS STREET
MANSFIELD, OHIO

Eastern Office
121 W. 42d Street
NEW YORK CITY

PRODUCTS—PACKLESS RADIATOR VALVES; GRADUATED AND HOT WATER VALVES

TRIUMPH

HOW TO SPECIFY—Each Radiator to have a "TRIUMPH" No. 42, Finish D, Radiator Valve, Size.....

DESCRIPTION—(A) Handle—Made of foreign wood, very tough and of natural finish. The shape of the handle, and its connection with the valve, would readily be appreciated, from the standpoint that the hand, in opening and closing the valve, cannot be burnt by coming in contact with the brass parts.

(B) Adjusting Nut—Adjusts the spring D, on the Handle-Holder to a predetermined pressure, holding all parts from the 45° seat S and upwards, including Rings G, Gland F, and Handle Holder E, in perfect contact.

(C) Locking Screw—Permanently locks the adjusting screw B in position. So there is absolutely no chance for the adjusting screw backing off. The threads on the adjusting screw B, and the lock screw C, are of different size and pitch, which form a permanent lock when brought together.

(D) Spring—Which holds the parts as above described in perfect contact, and automatically takes up any wear which may be caused from operating.

(E) Handle Holder.

(F) Gland—Forming a metal seat for Handle Holder E to ride on, and beveled so as to force Rings inward, thus causing same to hug the stem part of the socket.

(G) Jewett Rings—Asbestos ring packing.

(H) Socket—With a 45° Seat.

(I) Brass Disc Holder—For holding composition disc K.

(J) Guide Pins—Which engage the slots in the Bonnets, thus preventing the disc from turning around in its upward and downward movement.

(K) Composition Disc—"TRIUMPH," which is especially made and tested under extreme conditions, in order to give more wear than the regular line of Radiator Discs.

(L) Disc Nut—Which holds the composition disc in place.

(M) Third Seat—Limits the disc I, in its upward movement and forming a permanent stop for same when raised to its highest limit.

(N) Bonnet—Which is 45° seated to contact with the 45° seat on Socket H.

(O) Body

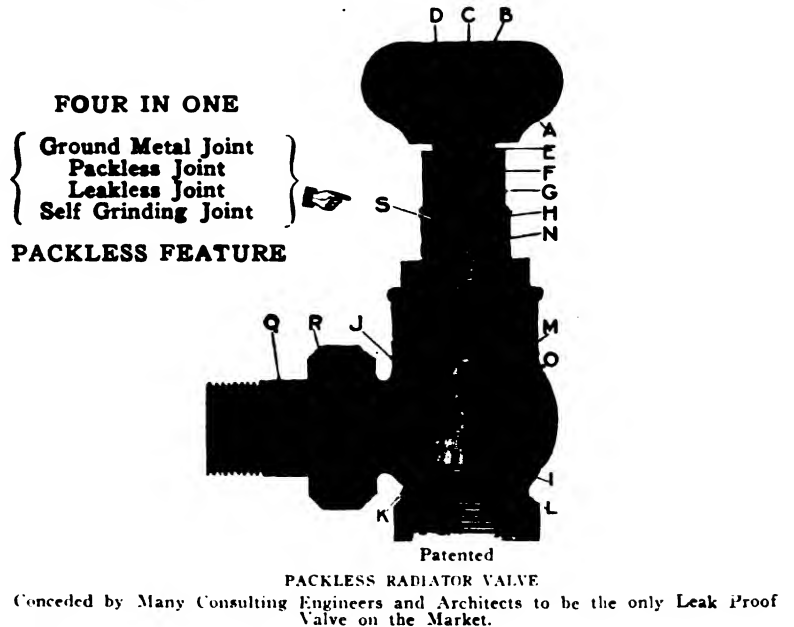
(Q) Tail Piece.

(R) Union Nut.

(S) Ground Joint—Forming a tight joint between the Socket H and the Bonnet N, making it absolutely impossible for any steam or fluid of any nature to pass beyond this point.

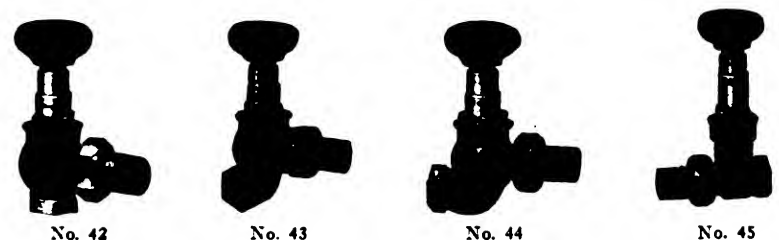
SUMMARY—A Valve absolutely leakless and packless. A Ground Metal Joint S, the only kind of a joint which will without a doubt hold any kind of pressure. The only joint known giving the extreme of wearing qualities, and in this particular case, the most vital point in Radiator Valve construction, and one not found in any make of valve on the market except the "TRIUMPH."

"A.E.C." SYSTEMS



GRADUATED AND HOT WATER VALVES—We are also manufacturers of Graduated and Hot Water Valves.

LOCK AND SHIELD—We can furnish valves with Lock and Shield, when so ordered.



ANGLE No. 42 PATTERN

	LIST PRICE				
FINISH D.	SIZE $\frac{1}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough Body, N. P. all over.....	\$3.90	\$4.70	\$6.25	\$8.15	\$13.00

CORNER No. 43 PATTERN

		LIST PRICE				
FINISH D.	SIZE	¾	1	1¼	1½	2
Rough Body, N. P. all over.....		\$4.25	\$5.15	\$6.95	\$8.95	\$14.25

OFFSET No. 44 PATTERN

		LIST PRICE				
FINISH D.	SIZE	¾	1	1¼	1½	2
Rough Body, N. P. all over.....		\$4.25	\$5.15	\$6.95	\$8.95	\$14.25

GATE No. 45 PATTERN

LIST PRICE					
FINISH D.	SIZE 3/4	1	1 1/4	1 1/2	2
Rough Body, N. P. all over.....	\$4.05	\$5.30	\$6.75	\$8.25	\$11.90

Kelsey Heating Company

Manufacturers of Kelsey Systems of Heating and Ventilation

MAIN OFFICE: COR. SALINA AND FAYETTE STREETS

SYRACUSE, N. Y.

NEW YORK OFFICE
156 Fifth Avenue

Factory: Cor. Pearl and Canal Streets, Syracuse, N. Y.

Sole Makers for Canada
THE JAMES SMART MFG. CO., LTD.
BROCKVILLE, ONT.

PRODUCTS—KELSEY WARM AIR GENERATORS for Kelsey Gravity and Mechanical Systems of Heating and Ventilating

DESCRIPTION—THE CORRUGATED TUBES—The principle of the Kelsey Generator is to warm great volumes of air by bringing it into actual contact with **very extensive and properly heated surfaces**. This result is accomplished by sending the air in separate channels through the battery of cast-iron Corrugated Heat Tubes which surround and overhang the fire just above the grate surface. By dividing the cold air in this way into many separate currents it is *more thoroughly and evenly heated* than by simply passing it over or next to an ordinary hot surface.

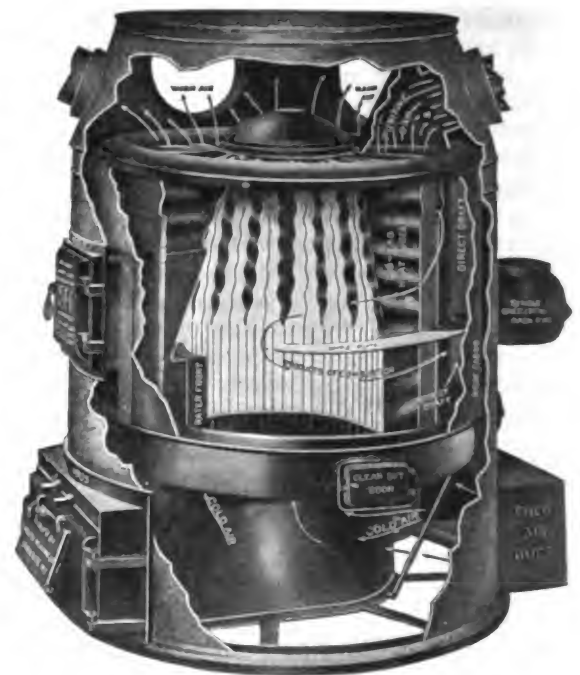
GREAT HEATING SURFACES—There are from 8 to 16 heat tubes in each Generator according to its size and capacity. The tubes are wider at the back than at the front, and form, when in position, the **fire cylinder and combustion chamber**. The heat tubes vary in number and size according to the heater. The tubes in a No. 30 are 40 inches long, weigh about 70 pounds each, and each tube has from 8 to 9 square feet of heating surface. At the back the heat tubes overlap each other, confining the fire within; but, at the top, open spaces are left between the heat tubes through which the products of combustion pass to the Draft chamber, thence down around the backs of the tubes to the *indirect draft opening*.

In a Generator of average size (12 heat tubes) there are 146 square feet of heating surface, or 61 square feet of heating surface to every square foot of grate area, which is **more than double** that in the ordinary furnace. This explains the Kelsey's wonderful efficiency, power and capacity to properly warm great volumes of air and to distribute it evenly throughout the house.

"A.B.C." SYSTEMS



HEAT TUBE



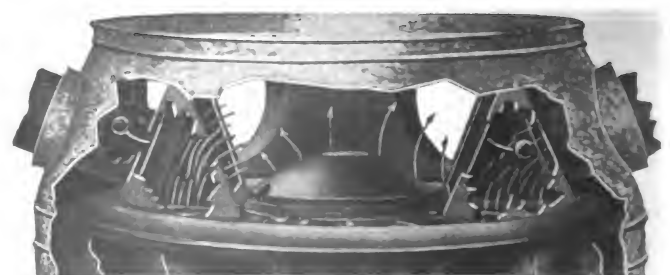
KELSEY WARM-AIR GENERATOR
Showing Single Back Pipe Used with Cast Inside Casing. Passage of Air Up Through the Heat Tubes and Showing the "Positive Cap Attachment" Over Two of the Sections.



INTERIOR VIEW OF HEATER
SHOWING THE BATTERY OF 16 ZIG-ZAG HEAT TUBES
IN A NO. 30 GENERATOR

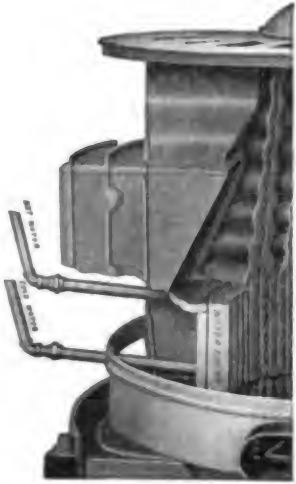
This Cut Serves to Give a Clear Impression of the Heating Surfaces in the Kelsey with Which the Fire and Products of Combustion Come in Contact, and Their Capacity for Warming an Abundance of Air Evenly and most Economically

POSITIVE ATTACHMENT—This is a device which is exclusive with the Kelsey Generator. By capping two or more of the heat tubes and leading the warm air furnished by them into particular heating pipes it is made possible to warm very effectively rooms located on a level with the Generator or those distantly located. The occupant of the room can close off the damper as required, thus diverting the warm air into the general reservoir. *No heat is wasted. No other room suffers a loss of heat.*



KELSEY POSITIVE CAP ATTACHMENT

Continued on next page



HOT WATER ATTACHMENT IN POSITION

HOT-WATER ATTACHMENT—This attachment, when required, is located directly under the feed mouth door, so that it is heated with very little extra fuel cost. It will at small cost afford an ample supply of hot water for domestic purposes.



THE KELSEY COMBINATION SYSTEM WARM AIR AND HOT WATER
Showing Hot Water Boiler with Flow and Return Pipes and "Draw-Off" Pipe Which Extends Through Side of Upper Feed-Mouth, Then Through Outside Galvanized Casing

COMBINATION SYSTEM—The Kelsey Generator and Climax Hot Water Boiler combined, as shown in cut, is especially adapted for heating conservatories and all distant rooms, or buildings to which it may be difficult to extend warm-air pipes. This Boiler can be used in sizes 18, 21, 24, 27, and 30

BATTERY SYSTEM—FOR LARGE BUILDINGS—Two or more Kelsey Generators are placed under one dome casing, from which 25, more or less, warm-air pipes lead to different parts of large residences.

During the fall or spring, when only a moderate quantity of heat is desired, only one Generator need be used. Thus the cost of fuel and labor of attendance is always in proportion to the service required.



BATTERY SYSTEM OF HEATING

Battery of Two Generators Under One Dome Casing. Twenty-six Heat Conducting Pipes

THE KELSEY MECHANICAL SYSTEM—(FAN BLAST)—For large Residences, Schools, Churches, Public Buildings, etc.



THE KELSEY MECHANICAL (FAN BLAST) SYSTEM
Showing Cold Air Inlet, Cold Air Room, Engine, Fan, Pressure Room and Passage of Air Through Generator

The laws of many states require each occupant of school buildings to be supplied with 30 cubic feet of fresh air, properly warmed, per minute. These requirements are fully met by this system. In operation a fan or blower, driven by gasoline engine, electric or water motor, draws the fresh air in through a window and forces it under and through one or more Kelsey Generators, and thence to all parts of the building. The air is changed completely at 15-minute intervals. The system is noted for its simplicity.

Large Volumes of fresh air are heated to proper temperature at lowest cost for fuel and maintenance. Heating estimates and plans promptly furnished by our engineering department upon request.

SUMMARIZED ADVANTAGES—The Kelsey Generators offer these unique profitable considerations: 1. Simplicity of operation; 2. No engineer required; 3. No valves or radiators to freeze up or leak; 4. Even distribution of heat; 5. Reduced time required to warm any building; 6. Positive ventilation; 7. Durability; 8. Reasonable cost of installation and maintenance.

Prices, information, thousands of references, etc., sent on application.

TABLE OF DIMENSIONS, MEASUREMENTS, CAPACITIES, ETC., OF KELSEY GENERATORS

Size or Number	Diam. of Base	Height of Castings	Height, Cased Complete	Diam. of Grate and Fire Cylinder	Grate Area Sq. In.	Number of Long Heat Tubes	Heating Surface in Sq. Ft.	Sq. Ft. of Heating Surface to 1 Sq. Ft. of Grate Surface	WEIGHTS		Size of Smoke Pipe
									Casting in Lbs.	Generator Complete	
14	38"	49"	61"	14"	154	8	91	85	946	1008	7"
16	42"	53"	65"	16"	201	8	114	82	1105	1116	7"
18	46"	56"	68"	18"	254	10	135	78	1546	1635	7"
21	53"	59"	69"	21"	346	12	146	61	1924	2033	9"
24	56"	59"	69"	24"	452	14	161	51	2189	2300	9"
27	60"	62"	72"	27"	572½	14	176	44	2475	2600	9"
30	64"	66"	76"	30"	707	16	211	43	2994	3124	9"

Size or Number	COLD AIR SUPPLY			HOUSE HEATING CAPACITY		CHURCH HEAT'G CAPACITY		COAL
	Inside Diam. of Brick Work, if Pit Used	Size of Cold Air Duct in Inches, if Air Taken From Outside	Size of Cold Air Face in Inches, if Air Taken From Inside	Number of Average Pipes or Rooms	Estimated Capacity in Cubic Feet	Number of Pipes	Estimated Capacity in Cubic Feet	
14	34"	12 x 24	18 x 24	3 to 4	4000 to 6000	1	8000	Chestnut
16	38"	12 x 30	20 x 26	4 to 6	6000 to 10000	1 to 2	10000 to 14000	Chestnut or Stove
18	42"	12 x 36	21 x 29	6 to 8	12000 to 16000	1 to 2	16000 to 20000	Stove
21	49"	14 x 40	24 x 32	9 to 11	18000 to 24000	1 to 2	25000 to 35000	Stove or Egg
24	52"	14 x 48	24 x 32	10 to 13	24000 to 32000	1 to 3	35000 to 45000	Stove or Egg
27	56"	14 x 56 or (2) 14 x 32	28 x 40 or (2) 21 x 29	12 to 16	35000 to 42000	1 to 3	50000 to 60000	Egg
30	60"	14 x 60 to 72 or (2) 14 x 40	30 x 48 or (2) 24 x 32	16 to 22	45000 to 55000	2 to 4	70000 to 90000	Egg

The capacities given for house and church heating are estimated averages under varying conditions and are based on heating to 70 degrees Fahrenheit with temperature outside registering at zero.

All weights include refined sheet iron inside casings, Series A or B. With cast inside casings add from one to three hundred pounds for each heater.

Extra high tops must be used with Battery Systems.

Trench plates to close part of space between inside casing and outside galvanized casing or brick walls are required with both Mechanical and Gravity installations.

Giblin & Company

Manufacturers of

Warm-Air, Steam and Hot-Water Heating Apparatus

105 BROAD STREET

UTICA, N. Y.

PRODUCTS—WARM-AIR CAST-IRON AND STEEL-DOME FURNACES; COMBINATION HEATERS; STEAM AND HOT-WATER BOILERS

Trade Name, "STANDARD."

FUEL—Hard Coal; Soft Coal; Gas; Wood.

GENERAL DESCRIPTION—

FURNACES—The distinctive features are:

- Base and Bottom Casing Ring in one casting;
- Ash Pit—one-piece casting, deep and wide;
- Grates—reverse motion, and revolving or geared grates; easily replaced without disturbing the setting;
- Fire Pots—in two pieces to allow for expansion and contraction;
- Feed Sections—all cast-iron, constructed so as to secure on the outside the cold air and the greatest heat on the inside at the same points;
- Radiator—four-dome, all cast-iron, made in one piece without any joints whatever, absolutely self-cleaning and indestructible;
- Feed and Ash Doors—fitted airtight, securing perfect control of drafts.

BOILERS—The distinctive features are:

- Round Boilers—Water Sections in three parts only: Fire Pot, Feed Section and Dome. First two connected by push nipples, and shipped separately.
- All Water Castings tested to 65 lbs. pressure.
- Indirectness of draft and consequent economy of fuel the prevailing feature. *See below.*
- General Construction—radically different from all others and embodying original principles favorably tested for the past twenty years.

INDIRECT DRAFT—We wish to call particular attention to this feature of our 30, 100 and 400 Series Sectional Boilers. It is unique with us. In other boilers the course of the draft is steadily upwards, with the smoke outlet at the highest point of the combustion chamber, involving the loss of a considerable amount of heat up the chimney.

The Indirect Draft conserves this waste by directing the course of the draft upwards over the fire, then to the rear, then downwards toward the front of the combustion chamber, and leaving at or below the level of the fuel.

QUALITY—Both furnaces and boilers are not made or sold in competition but, because of original features, are designed for use where thorough efficient heating with economy in fuel and great durability are sought, rather than low first cost.

SIZES, FURNACES—Fire Pots, diameter 20" to 32";

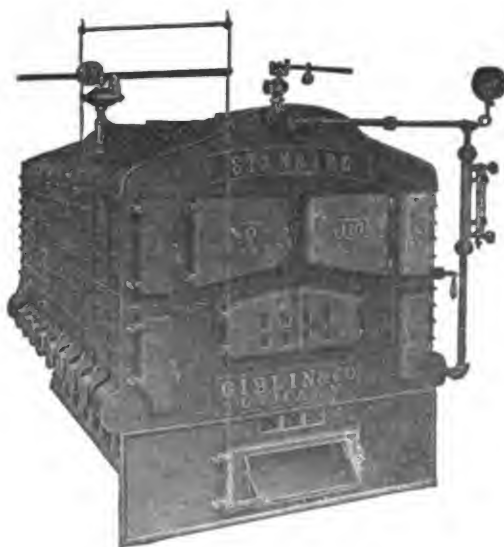
- Casings, 37" to 62";
- Pipe Capacity, 350 to 1500 sq. ins.;
- Air Capacity, 10,000 to 85,000 cu. ft.;
- Weight, 700 to 2300 lbs.;
- Fifty-four different sizes.

SIZES, BOILERS—Fire Pots, diameter 18" to 29" in Round Boilers, and 26" width and 40" width in Sectional Boilers;

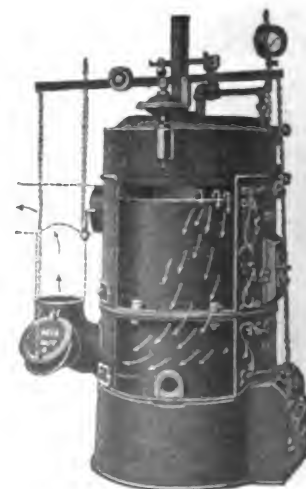
- RATED CAPACITY, Steam, 300 to 6000 sq. ft.;
- RATED CAPACITY, Water, 500 to 10,000 sq. ft.;
- Weight, 1000 to 12,000 lbs.;
- Seventy-five different sizes in steam and hot water.



STANDARD FURNACE, CAST-IRON,
FOUR-DOME 8 AND 9 SERIES



STANDARD SECTIONAL STEAM BOILER,
400 SERIES



STANDARD BOILER,
30 SERIES

Correspondence solicited; and Catalogs with full Details furnished.

"A.B.C." SYSTEMS

Established 1831

Fuller & Warren Co.

Incorporated 1881

Manufacturers of "Stewart" Furnaces and Tank Heaters

TROY, N. Y.

NEW YORK OFFICE AND SHOWROOM: 256 WATER STREET

For Our Catalog on Ranges see Section 36A, Cat. 1

PRODUCTS — WARM-AIR FURNACES, COMBINATION HOT-WATER AND WARM-AIR FURNACES, NATURAL-GAS FURNACES, TANK HEATERS, HEATING STOVES, RANGES, ETC.

DESCRIPTION — **STEWART** Furnaces are of standard make and old-established reputation. Best quality of iron used. No scrap. Castings can endure intense heat, being extra heavy and of tough iron. All joints horizontal, carefully fitted and well cupped, being absolutely gastight.

DETAILS — Large combustion chambers with long fire travel and immense heating surface. Extra heavy triangular grate which can be readily replaced without dismantling Furnace. Large grate area. Fire Pot with straight sides, insuring good draft. Water heating attachment for kitchen boiler.

SPECIAL DEPARTMENT—Plans and specifications for heating and ventilating work prepared for architects by our Engineering Department. Special Contracting Department for schools, churches, lodges, etc.

CATALOGS—Catalogs or any additional information upon request.



STEWART FURNACE "B" SERIES

Steel Radiator, Portable Form Triangular Grate. "C" Series same style with cast-iron, one-piece radiator. Hard or soft coal or wood.



STEWART FURNACE "L" SERIES

Deep Steel Radiator, Portable Form Triangular Grate. Hard or soft coal or wood. Double-feed doors.



STEWART FURNACE "O" SERIES

Deep Steel Radiator, Portable Form Triangular Grate. Hard or soft coal or wood. Large single-feed door.

DIMENSIONS AND HEATING CAPACITY OF STEWART FURNACES

With Cast Front	Diameter of Fire Pot, Inside	Diameter of Galvanized Casing	Height of Furnace	Recommended Size of Cold-Air Box in Inches	Diameter of Smoke Pipe Collar	Heating Capacity	
						Number of Hot-Air Pipes Average Size	Diameter of Hot-Air Pipe if one only is used
B 18-32	18 in.	32 in.	46½ in.	10 x 15	7 in.	3 to 4	20 in.
B 20-36	20 in.	36 in.	50½ in.	10 x 22	7 in.	4 to 5	22 in.
B 22-42	22 in.	42 in.	51½ in.	12 x 25	8 in.	5 to 7	26 in.
B 24-48	24 in.	48 in.	54½ in.	13 x 28	8 in.	6 to 8	28 in.
B 26-53	26 in.	53 in.	56½ in.	14 x 32	8 in.	7 to 9	30 in.
B 28-58	28 in.	58 in.	58½ in.	14 x 35	10 in.	9 to 11	32 in.
B 31-60	31 in.	60 in.	59½ in.	14 x 45	10 in.	10 to 12	36 in.
B 35-65	35 in.	65 in.	61 in.	16 x 42	10 in.	12 to 15	40 in.
C 20-36	20 in.	36 in.	47½ in.	10 x 22	7 in.	4 to 5	22 in.
C 22-42	22 in.	42 in.	49½ in.	12 x 25	8 in.	5 to 7	26 in.
C 24-48	24 in.	48 in.	53 in.	13 x 28	8 in.	6 to 8	28 in.
C 26-53	26 in.	53 in.	54 in.	14 x 32	9 in.	7 to 9	30 in.
L 22-42	22 in.	42 in.	54 in.	13 x 28	8 in.	6 to 8	28 in.
L 24-48	24 in.	48 in.	56 in.	14 x 32	8 in.	7 to 9	30 in.
L 26-53	26 in.	53 in.	57 in.	14 x 35	9 in.	9 to 11	32 in.
L 28-58	28 in.	58 in.	58 in.	14 x 45	9 in.	10 to 12	36 in.
O 20-39	20 in.	39 in.	49 in.	13 x 25	7 in.	5 to 7	26 in.
O 22-42	22 in.	42 in.	50 in.	13 x 28	8 in.	6 to 8	28 in.
O 24-48	24 in.	48 in.	52 in.	14 x 32	8 in.	7 to 9	30 in.
O 26-53	26 in.	53 in.	52 in.	14 x 35	9 in.	9 to 11	32 in.
O 28-58	28 in.	58 in.	53 in.	14 x 45	9 in.	10 to 12	36 in.
A-225	22 in.	40½ in.	54½ in.	12 x 25	7 in.	5 to 7	26 in.
A-245	24 in.	44½ in.	55½ in.	13 x 28	8 in.	6 to 8	28 in.
A-265	26 in.	48½ in.	57½ in.	14 x 32	9 in.	7 to 9	30 in.
A-285	28 in.	51½ in.	59½ in.	14 x 40	10 in.	9 to 11	32 in.
A-300	30 in.	65½ in.	63 in.	14 x 40	10 in.	10 to 12	36 in.
A-350	35 in.	65½ in.	63 in.	16 x 44	10 in.	12 to 15	40 in.



STEWART FURNACE "A" SERIES

All cast iron. Portable, or Brick-set, Triangular Grate. A strictly high-grade, extra-heavy Furnace. Hard or soft coal.

DIMENSIONS AND CAPACITY OF "F. & W." TANK HEATERS

No.	12	15	18
Diameter of Body, in.	16	19	22
Inside diameter of fire pot, in.	12	15	18
Gallons of water heated per hour 60° to 150° F.*	85	170	380
Direct radiation, sq. ft.	100	200	350
Size of smoke pipe, in.	6	7	7

*At a lower temperature than 150° F. they will heat a much larger quantity of water.



"F. & W. CO." TANK HEATER
TRIANGULAR GRATE

"A.B.C." SYSTEMS

Taplin-Rice-Clerkin Co.

Manufacturers of
Furnaces, Ranges, Stoves
AKRON, OHIO

AGENCIES THROUGHOUT THE UNITED STATES, AND IN GERMANY AND BELGIUM

PRODUCTS—"CLIMAX" FURNACES, RANGES, STOVES, for burning the various Kinds of Coal, Wood and Natural Gas

"CLIMAX" FURNACES—These furnaces are efficiently designed and constructed, each type for the kind of fuel it is to consume. The "Climax" and "Low Climax" types are identical in general design, the main point of difference being the lesser height of the latter, making it especially adaptable to low cellars. These two types burn soft coal, smokeless coal and wood. The "Century Climax" burns hard coal, smokeless coal, coke and natural gas. The "Oak Climax" is designed to consume soft coal, coke, smokeless coal, wood and natural gas. Dimensions, ratings and prices for each type are given below.

All necessary Regulators, Weights, Chains and Poker are included in the price of each furnace, as listed.

GUARANTEE—"Climax" Furnaces are subject to guarantee only when installed under our supervision or direction.

DETAILS OF CONSTRUCTION—Only the best pig iron is used in all our products, and we know, from years of experience, how to produce the mixtures "just right" for the various purposes. The fact that during the last twenty years we have made many thousand tons of furnace castings for other manufacturers speaks for itself.

Ash Pits are extra roomy so that ash pans of the full size of grates may be inserted to prevent littering of ashes. The pans are a part of the equipment.

Grates are of three different types and interchangeable, each style possessing merits of its own. Thus we can meet all opinions and preferences.

Firepots are of cellular-slotted type, with corrugations both on the inside and outside, to prevent the cracking of the pots.

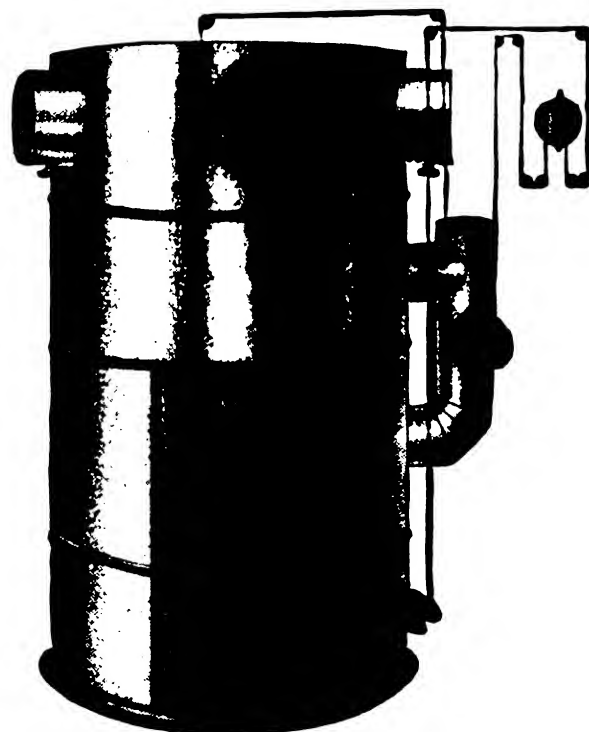
Cast-iron Radiators are corrugated to give strength and other advantages. Plate Radiators are of heavy body and are of cold-rolled, open-hearth steel and very heavy.

Casings have extra-wide space between inner and outer shells, which saves heat by preventing radiation into the cellar.

"Climax" Regulators are fitted to all our furnaces and are a simple but efficient device to regulate the heat and draft.



TRADE MARK



"CLIMAX" FURNACE, CASED

NOTE ON "CLIMAX" FURNACES—

Nos. 2, 3, 4, 5, 6, are high furnaces.
Nos. 21, 31, 41, 51 are low furnaces.

An extra large furnace adapted for heating school houses, churches, libraries and the like, capable of carrying from 200,000 to 250,000 cubic feet of air per hour, has just been added to our list. Measurements and rated capacities of same will be furnished on application.

SIZES OF SMOKE PIPE

Nos. 2, 21, 20, 200, 8 inch.
Nos. 3, 31, 30, 300, 8 inch.
Nos. 4, 41, 40, 400, 9 inch.
Nos. 5, 51, 50, 500, 9 inch.

Extra large type above mentioned will be connected with 10-inch smoke pipe.

THE "CLIMATE" BASE BURNER—For hard coal—A powerful and durable heater, attractive in appearance. All trimmings bathed in copper before being nickel-plated, producing a plating equal to double nickeling.



"CLIMAX" BASE BURNER

CLIMAX FURNACES DIAMETERS, LIST, CAPACITIES AND GENERAL INFORMATION.

CLIMAX FURNACE

No.	Dia. of Base	Dia. of Fire Pot	Dia. of Casing	Height Uncased	Wt. Lbs. with Casings	Capacity Per Hour Cubic Feet	List Less Case	List Double Casings
2	49	18	46	56	1200	12000-15000	\$110.00	\$16.00
3	52	21	49	58	1400	16000-24000	130.00	20.00
4	55	25	52	62	1800	25000-35000	160.00	24.00
5	59	28	56	64	2000	35000-50000	190.00	28.00
6	59	28	56	72	2300	50000-70000	220.00	30.00

LOW CLIMAX FURNACE

21	49	19	46	48	1200	12000-15000	110.00	16.00
31	52	21	49	51	1400	16000-24000	130.00	20.00
41	55	25	52	55	1800	25000-35000	160.00	24.00
51	59	28	56	58	2000	35000-50000	190.00	28.00

CENTURY CLIMAX FURNACE

20	49	19	46	52	1000	12000-15000	110.00	16.00
30	52	21	49	54	1250	16000-24000	130.00	20.00
40	55	25	52	56	1450	25000-35000	160.00	24.00
50	59	28	56	58	1650	35000-50000	190.00	28.00

OAK CLIMAX FURNACE

200	49	19	46	52	900	12000-15000	110.00	16.00
300	52	21	49	54	1150	16000-24000	130.00	20.00
400	55	25	52	56	1350	25000-35000	160.00	24.00
500	59	28	56	58	1550	35000-50000	190.00	28.00

"A.B.C." SYSTEMS

Size	Price	Diameter Fire Pot, Inches
141	\$80.00	14
151	86.00	15
161	90.00	16
171	94.00	17

CLASSIFICATION PAGE OF
SECTION 30

**Electric Apparatus and Equipment for Light, Power,
Heating and Cooking**

(Lighting Fixtures, Lamps, etc. see Section 42)
(Underground Conduits see Sections 7 and 8)

Section Synopsis

A. GENERATORS of all designs; Belt-driven and Direct-connected Outfits; Turbine Machines; Gasoline-Engine Sets; Accumulators, Transformers, Controllers, Storage Batteries; Storage Battery Lighting Systems

B. COPPER WIRE AND CABLE; Switches; Switchboards; Regulating and Measuring Instruments; Protective Devices; Interior Wiring Details; Receptacles, Cutouts, Fuses, Contact Plugs, Moldings, Insulators

Interior Conduits, metal, cement-lined pipe, flexible-fiber, etc.; Conduit Fittings; Distribution Panels and Cabinets; General Electric Light and Power Engineering.

C. LAMPS, Arc and Incandescent of every kind; Sockets; Fixtures; Detail Exterior Wiring Equipment, poles, brackets, pulleys, etc.; Vacuum-Tube Lighting, etc.

D. Motors, of all designs and for all purposes; Motor Instruments; Electric Water and Sewage Pumps; Electric Air Compressors; Searchlights; Electric Fans; Electric Power Tools and Apparatus for all purposes

E. Electric Heating and Cooking Apparatus, and other Domestic Electric Appliances

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX		
REGULAR CLASSIFICATION		
A	1 Accessory apparatus:— Accumulators, circuit breakers, transformers, controllers, rotary converters, rheostats, etc.	
	Generators:—	
	2 Alternating current	
	3 Belt-driven outfits, <i>steam</i>	
	4 Direct current	
	5 Direct-connected outfits, <i>steam</i>	
	6 Gasoline-engine sets	
	7 Petroleum-engine sets	
	8 Standard and special gas-engine sets	
	9 Steam-turbine machine sets	
	10 Storage batteries	
11 Storage-battery lighting system		
B	Conduits, <i>interior</i> :—	
	25 Cement-lined pipe	
	26 Flexible-fiber, <i>plain, armored</i>	
	27 Metallic, <i>coated</i>	
	28 Conduit outlet boxes and fittings	
	Copper wire and cable:—	
	29 Flexible, <i>steel-armored conductor</i>	
	30 Lead-encased, <i>cable, marine, underground</i>	
	31 Paper-insulated, <i>cable</i>	
	32 Rubber-insulated, <i>wire, cable, standard, flexible</i>	
	33 Steel-taped, <i>wire, cable</i>	
	34 Theatre, signal, telephone, etc., <i>wire, cable</i>	
	35 Distribution panelboards, <i>all combinations</i>	
	36 Distribution panel cabinets, <i>wood, steel</i>	
	37 Floor outlets, <i>adjustable</i>	
	38 Lightning arresters	
	39 Mercury-arc rectifiers	
	40 Locknuts, bushings	
	C	41 Metering panels, <i>combination, distribution</i>
		42 Regulating and measuring instruments, <i>ammeters, voltmeters, wattmeters, etc.</i>
Switchboards and knife switches:—		
43 Complete installations, <i>slate, marble, soapstone, asbestos</i>		
44 Switches and fuses of all kinds		
45 Wiring details, <i>receptacles, cut-outs, floor boxes, contact plugs, insulators, local switches, moldings, etc.</i>		
Arc lamps:—		
60 Alternating current		
61 Direct current		
62 Enclosed		
63 Flaming		
64 Magnetic		
65 Miniature		
66 Regenerative		
67 Detail exterior wiring appliances, <i>poles, brackets, pulleys, etc.</i>		
Incandescent lamps:—		
68 Carbon filament		
69 Mazda		
70 Tantalum		
71 Tungsten		
72 Lamp sockets		
73 Vacuum-tube lighting and details		
D	Electric:—	
	85 Air compressors	
	86 Fans, <i>portable</i>	
	87 Motors, <i>all designs direct, alternating, etc., for elevators, pumps, tools, etc.</i>	
	88 Motor instruments, <i>starters, etc.</i>	
	89 Motor controllers, <i>elevator, etc.</i>	
	90 Power tools, <i>hoists, cranes, drills, punches, riveters, etc.</i>	
	91 Searchlights	
	92 Sewage and bilge pumps	
	93 Water pumps	
	E	Electric heating, cooking and laundering apparatus and other domestic appliances:—
Heaters		
105 Portable culinary apparatus		
106 Ranges, stoves, broilers		
107 Sad irons, rufflers, etc.		
108		
SPECIAL CLASSIFICATION		
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.		
121 Illumination design, reflectors, concealed lighting, etc. (S. 42)		
122 Interconnection bell and telephone boxes and strips (S. 34 A)		
123 Telephone and signal-system switchboards (S. 34 A)		
TRADE NAMES AND BRANDS		
"American," electrical conduits	Catalog B 6	
"Galvanite," electrical conduits		
"Wireduct," electrical conduits		
"Bryant," electric wiring fittings	Catalog B 3	
"New Wrinkle," line of key-sockets		
"Perkins," electric wiring fittings		
"Flexbox," outlets	Catalog B 10	
"Fullman," floor outlets		
"Universal" (McFeator's Patent), insulator supports		
"Galvaduct," conduits	Catalog B 9	
"Loricated," conduits		
"S.A.C.Co. Special," conduits		
"Sterling," conduit and flexible steel-armored conductors		

				Sub-Index Numbers					SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.
Cat. No.	Manufacturers having Catalog data in this Section	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150			
<p>"G.E.," switchboards and panels, and electric equipments, Catalog B 8</p> <p>"J-M," fiber electric conduit</p> <p>"Noark," standard fuse devices and service boxes } S. 28 D, Catalog 2</p> <p>"Neptune Atlantic," wires and cables } Catalog B 5</p> <p>"30% Para" specification wire } Catalog B 5</p> <p>"Triton Atlantic," wires and cables }</p> <p>"Norbitt," receptacles and wiring fittings, Catalog B 1</p> <p>"Ruby Core," wire } Catalog B 2</p> <p>"Safety Seamless," wire and cable }</p> <p>"Whitehall," 30% Para insulated cable }</p>							<p>B 8 General Electric Co. Schenectady, N. Y.</p> <p>1 32 61 91 121</p> <p>2 33 62 105</p> <p>3 34 63 106</p> <p>4 35 64 107</p> <p>5 36 65 108</p> <p>6 37 66</p> <p>7 38 67</p> <p>8 39 68</p> <p>9 41 69</p> <p>10 42 70</p> <p>11 43 71</p> <p>30 44 72</p> <p>45 73</p> <p>60 86</p> <p>87</p> <p>88</p> <p>89</p>		
							<p>Blaisdell Machinery Co., The</p> <p>S. 38, Cat. 4</p> <p>(Electric air compressors)</p>		
							<p>Bramhall Deane Co.</p> <p>S. 36 A, Cat. 2</p> <p>(Electric cooking apparatus)</p>		
							<p>Dahlstrom Metallic Door Co.</p> <p>S 16 D, Cat. 1</p> <p>(Steel panelboard cabinets)</p>		
							<p>Douglas, W. & B.</p> <p>S. 35 F, Cat. 2</p> <p>(Electric water and sewage pumps)</p>		
							<p>Federal Sign System (Electric)</p> <p>S. 42, Cat. 1</p> <p>(Electric wiring fittings and domestic appliances)</p>		
							<p>Johns-Manville Co., H. W.</p> <p>S. 28 D, Cat. 2</p> <p>(Fuse devices, service boxes, etc.)</p>		
							<p>Stanley & Patterson</p> <p>S. 34 A, Cat. 1</p> <p>(Electric supplies, complete line)</p>		
							<p>Thomas & Smith, Inc.</p> <p>S. 35 F, Cat. 3</p> <p>(Electric sewage and bilge pumps. Electric water pumps)</p>		

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
Adam Electric Co., Frank... St. Louis, Mo.		35 36 43 44				Benton-Electric Co. LaCrosse, Wis.	3 5			91		Crescent Insulated Wire & Cable Co. Trenton, N. J.		32			
Adams-Bagnall Electric Co.. Cleveland, Ohio		60	61 62 63 66 86 87			Benjamin Electric Mfg. Co.. Chicago, Ill.		45	72			Crocker-Wheeler Co., Ampere, N. J.	1 2 4				
Alberger Pump Co., New York, N. Y.				92 93		Biddle, James G., Philadelphia, Pa.	1	35 42 43				Crowell, J. G., Brooklyn, N. Y.				93	
Allis-Chalmers Co., Milwaukee, Wis.	2 4		85 87	93		Bishop Gutta Percha Co., New York, N. Y.		32				Cuthbert Electrical Mfg. Co., Chicago, Ill.	3 5 6 10	35 42 43 44 45	67 86 87	105	
Almstead Mfg. Co., Rochester, N. Y.		35 43 44				Bissel Co., F., Toledo, Ohio		36 42 43		105		Cutler-Hammer Mfg. Co., Milwaukee, Wis.	1				
Alphaduct Co., Jersey City, N. J.	26					Blake Electric Mfg. Co., Boston, Mass.		43 44				Cutter Electric & Mfg. Co., Philadelphia, Pa.	1				
American Battery Co., Chicago, Ill.	6 10 11	39				Bosch Magneto Co., New York, N. Y.	6 7 8					Dake Engine Co., Grand Haven, Mich.	5				
American Conduit Mfg. Co., Pittsburgh, Pa.	26 27					Bourn Rubber Co., Providence, R. I.		32				Dayton Electrical Mfg. Co., Dayton, Ohio	6 10 11				
American Electric Switch Co., Springfield, Mass.		35 44 45				Box & Co., Alfred, Philadelphia, Pa.			90			Dayton Fan & Motor Co., Dayton, Ohio			86		
American Rotary Valve Co., Chicago, Ill.			87			Bowser & Co., S. F., Fort Wayne, Ind.				93		Dean Electric Co., Elyria, Ohio	11				
American Storage Battery Co., Boston, Mass.	10					Brady, T. H., New Britain, Conn.			67			De Laval Steam Turbine Co., Trenton, N. J.	9			93	
American Transformer Co., Newark, N. J.	1					Burke Electric Co., Erie, Pa.	2 3 5					Detroit Fuse & Mfg. Co., Detroit, Mich.		44			
American "Z" Electric Lamp Co., New York, N. Y.			71			Butte Engineering & Electric Co., San Francisco, Cal.	1	35 43	90 105 106			Diehl Mfg. Co., Elizabeth, N. J.	3 4 5 6 7 8 9		86 87		
Anderson Mfg. Co., A. & J., M., Boston, Mass.	10	38 44	61			Campbell Electric Co., Lynn, Mass.	1		68			Doubleday-Hill Electric Co., Pittsburgh, Pa.		45			
Andrae & Sons Co., Julius, Milwaukee, Wis.	10 11	43				Century Electric Co., St. Louis, Mo.			86 87			Drendell Electrical & Mfg. Co., San Francisco, Cal.	1 11	35 42 43 44		91	
Apple Electric Co., Dayton, Ohio	10					Chicago Electric Mfg. Co., Chicago, Ill.		45				Eager Electric Co., Watertown, N. Y.	2 3 4 5		87		
Appleton Electric Co., Chicago, Ill.	28	40				Chicago Fuse Wire & Mfg. Co., Chicago, Ill.	28	44				Economical Electric Lamp Co., New York, N. Y.			68 69		
Arrow Electric Co., Hartford, Conn.		44 45	72			Clayton Air Compressor Works, New York, N. Y.			85			Economy Electric Co., Brooklyn, N. Y.		60	61 63 64		
Austin & Co., M. B., Chicago, Ill.	26 27					Clifton Mfg. Co., Boston, Mass.	27					Edison Storage Battery Co., Orange, N. J.	10				
Automatic Electric Co., Chicago, Ill.		44				Clyde Iron Works, Duluth, Minn.			90			Eldredge Electric Mfg. Co., Springfield, Mass.		42			
Automatic Switch Co., New York, N. Y.	1		89			Coates Clipper Mfg. Co., Worcester, Mass.			90			Electrical Mfg. Co., Cleveland, Ohio		44			
Backus Water Motor Co., Newark, N. J.	6 8		86	93		Collyer Insulated Wire Co., Pawtucket, R. I.		32				Electric Cable Co., New York, N. Y.		32			
Banner Electric Co., Youngstown, Ohio			68 69 70 71			Columbia Metal Box Co., New York, N. Y.		35 43				Electric Controller & Mfg. Co., Cleveland, Ohio			88		
Barkelew Electric Mfg. Co., Middletown, Ohio		44				Commercial Battery Elec- tric Co., Chicago, Ill.	10 11	43				Electric Goods Mfg. Co., Canton, Mass.	10				
Bates & Bro. Co., D. L., Dayton, Ohio			86			Condit Electrical Mfg. Co., Boston, Mass.	1	40 44 45				Electric Machinery Co., Minneapolis, Minn.	2 3 4 5		87		
Beck Flaming Lamp Co., New York, N. Y.		60	61 63			Consolidated Car Heating Co., New York, N. Y.		44		105							
Bell Arc Light Co., Brooklyn, N. Y.		60	61 63 65			Crescent Electrical & Mfg. Co., Pittsburgh, Pa.	1 2 3 5	43 44 45 60	61 67 86 87								
Bell Electric Motor Co., Garwood, N. J.	1 2 4																

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150		1 to 30	31 to 60	61 to 90	91 to 120	121 to 150
Electric Storage Battery Co. Philadelphia, Pa.	1 10 11					Goldmark Co., James..... New York, N. Y.			86 87			Kurz & Root..... Appleton, Wis.	6 11	43 44	87		
Electric Supply & Battery Co. Cleveland, Ohio	10					Graybill & Co., John E..... York, Pa.	11					Lang Electric Co., J..... Chicago, Ill.	11	35 44 45			
Electro-Dynamo Co. Bayonne, N. J.			87			Graves Specialty Co..... New York, N. Y.				93		Lobee Pump & Machinery Co., Buffalo, N. Y.				93	
Empire Engineering & Sup- ply Co. New York, N. Y.		35 43 44				Habirshaw Wire Co..... New York, N. Y.		32				Lord Mfg. Co..... New York, N. Y.		38 60	61 62 63		
Enberg's Electric & Mechan- ical Works St. Joseph, Mich.	3 4 5 6	43				Hardy Co., R. E..... Chicago, Ill.	6					Lucas Pump Co..... Dayton, Ohio				93	
Enterprise Electric Co. Warren, Ohio	1					Harris Air Pump Co. Indianapolis, Ind.				93		Machen & Meyer Electric Mfg. Co. Philadelphia, Pa.		35 44 45			
Evans & Co. San Francisco, Cal.			93			Hart & Hegeman Mfg. Co... Hartford, Conn.		44 45				Manning, Maxwell & Moore New York, N. Y.				90	
						Hazard Mfg. Co..... Wilkes-Barre, Pa.		32				Mechanical Appliance Co.... Milwaukee, Wis.	1 2 4 10 11		97		
Fairbanks, Morse & Co. Chicago, Ill.	2 3 4 5 6 7 8 11		69 86 87 88	91 93 105		Helios Mfg. Co. Bridensburg, Pa.	10 11		62 63			Menchen Electrical Co., Jos. New York, N. Y.		43 45			
Farr Telephone & Construc- tion Supply Co. Chicago, Ill.			86			Hill Machine Co..... Anderson, Ind.				93		Metropolitan Electric Mfg. Co. Long Island City, N. Y.		35 36	43 44 45		
Federal Electric Co..... North Girard, Pa.	6 8 11					Hoosier Storage Battery Co. Evansville, Ind.	10 11					Metropolitan Electric Stage Lighting Co. New York, N. Y.		45			
Fibre Conduit Co. Orangeburg, N. Y.	26					Hubbell, Harvey, Inc. Bridgeport, Conn.		45	72			Monarch Electric & Wire Co. Chicago, Ill.	10 26 27	42 44 45	67 68 69 70 86	105	
Fidelity Electric Co..... Lancaster, Pa.	2 4		86 87			Hunter Pan & Motor Co.... Fulton, N. Y.			86			Morris Co., I. P..... Philadelphia, Pa.				93	
Fort Wayne Electric Works. Fort Wayne, Ind.	2 3 4 5	42 43 60	61 62 64 86 87 88			Ideal Electric & Mfg. Co.... Mansfield, Ohio	1 2 3 5 6 7 8	43	87 90			Mutual Electric & Machine Co. Wheeling, W. Va.		35 42 43 44			
Foster Pump Works..... Brooklyn, N. Y.				93		Jantz & Leist Electric Co.... Cincinnati, Ohio	2 3 4 5		87			National India Rubber Co... Bristol, R. I.		32			
Fox Multax Electric Co.... New York, N. Y.	3 5 6	41 60	61 63 65 68 69 70 71 90	92 93		Jaynes Co..... Newark, N. J.		45	67			National Metal Molding Co.. Pittsburgh, Pa.	26 27				
French Oil-Mill Machinery Co. Piqua, Ohio				93		Jarvis Engine & Machine Works Lansing, Mich.			87	93		New York Insulated Wire Co. New York, N. Y.		32			
Gardner Governor Co..... Quincy, Ill.				93		Kerite Insulated Wire & Cable Co. New York, N. Y.		32				Niagara Lead & Battery Co. Niagara Falls, N. Y.	10 11				
Garwood Electric Co..... New York, N. Y.	3 5	43	87			Kerr Turbine Co..... Wellsville, N. Y.	2 3 4 5 8 9					Norton Electrical Instru- ment Co. Manchester, Conn.		42			
Geissler Bros. Storage Bat- tery Co. New York, N. Y.	10 11					Keystone Electrical Instru- ment Co. Philadelphia, Pa.		42				Okonite Co..... New York, N. Y.		32			
General Illuminating Co.... New York, N. Y.			63 65 66 67			Kiewert Co., Chas. L..... Milwaukee, Wis.		60	61 63 65	91		Paiste Co., H. T..... Philadelphia, Pa.		36 44 45	72		
Gilmore Electric Co..... South Boston, Mass.			68 69 70 71			Kimble Electric Co..... Chicago, Ill.	2		86 87			Partrick, Carter & Wilkens.. Philadelphia, Pa.				107	
						Knop Battery Co..... Detroit, Mich.	10					Pass & Seymour, Inc..... Solvay, N. Y.		44 45	72		
						Kuhlman Electric Co..... Elkhart, Ind.	1					Peru Electric Co..... Peru, Ind.		45	72		
												Phelps Mfg. Co..... Detroit, Mich.				105	
												Philadelphia Electrical Con- struction Co. Philadelphia, Pa.	12 26	35 38			

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Phillips Insulated Wire Co., Pawtucket, R. I.		32				Sprague Electric Co..... New York, N. Y.	1 4 5 6 9 26	35 43 44 45	87 90			Volkmer Electrical Co..... New York, N. Y.		60 65			
Pittsburg Electrical & Ma- chine Works Pittsburgh, Pa.		42 43 44															
Pittsburgh Transformer Co., Pittsburgh, Pa.	1					Standard Underground Ca- ble Co. Pittsburgh, Pa.	29 30	31 32 33 34									
Post-Glover Electric Co..... Cincinnati, Ohio	25 26 27	35 38 44 45	67 68 69 70 71 72	91 105		Star Dynamo Co. Jefferson City, Mo.	4 5 6 11		87			Wagner Electric Mfg. Co.... St. Louis, Mo.	1 2 3	42	87		
Prime Electric Co..... New York, N. Y.			63			Steele, W. M. Worcester, Mass.		36 44				Walker Electric Co..... Philadelphia, Pa.		36 42 43 44			
Quimby, Wm. E., Inc..... New York, N. Y.				92 93		Stow Mfg. Co. Binghamton, N. Y.			87 90			Ward Leonard Electric Co... Bronxville, N. Y.	1				
Red Cross Mfg. Co..... Bluffton, Ind.				93		Strater & Sons, Herman Boston, Mass.				93		Warner Arc Lamp Co..... Muncie, Ind.	11	35 36 37 41 42 43 44 45	87 88 89		
Reliance Electric & Engin- eering Co. Cleveland, Ohio			87			Sumter Telephone Mfg. Co.. Sumter, N. C.	6	38				Warner Elevator Mfg. Co.... Cincinnati, Ohio			87		
Richmond Electric Co..... Richmond, Va.	1 3		87			Sundh Electric Co..... New York, N. Y.	1	35 36 37 41 42 43 44 45	87 88 89	93		Wesco Supply Co..... St. Louis, Mo.	1 5 6 10 11 25 26 27	35 38 39 42 43 44 45 60	61 62 63 64 65 66 67 69 86 87	105	
Ridgway Dynamo & Engine Co. Ridgway, Pa.	2 4		87			Sunswick Co. Astoria, N. Y.		32				Western Electric Co..... New York, N. Y.	2 3 4 26 27 29 30	31 32 33 34 35 36 37 38 41 43 44 45 60	61 62 63 64 65 66 67 68 69 70 71 72 73 86 87 88 89	105 106 107 108	
Robbins & Myers Co..... Springfield, Ohio	2 4		86 87 88			Terry Steam Turbine Co.. Hartford, Conn.	2 3 5 9					Thompson-Levering Co..... Philadelphia, Pa.		42	65 68 69 70 71 86	105	
Rochester Switchboard Co., Rochester, N. Y.		36 43 44				Triumph Electric Co..... Cincinnati, Ohio	1 2 3 4 5 6 8 9	35 36 37 41 42 43 44 45	87 88 89			Weston Electrical Instru- ment Co. Newark, N. J.		42			
Roller Smith Co..... New York, N. Y.	1 11	42				Union Switch & Signal Co.. Swissvale, Pa.		38	87			Wetherbee Igniter Co..... New York, N. Y.	10				
Rome Brass & Copper Co.... Rome, N. Y.		32				United States Light & Heat- ing Co. New York, N. Y.	10 11					Worcester Electric & Mfg. Co. Worcester, Mass.		36 43 44			
Rome Wire Co..... Rome, N. Y.		32				Universal Electric Stage Lighting Co. New York, N. Y.		45 60	61 65			Worthington, Hervey R. New York, N. Y.			85	92 93	
Rossmassler-Bonine Electric Co. Philadelphia, Pa.	4		87			Universal Electric Storage Battery Co. Chicago, Ill.	10 11					Wurdack Electric Mfg. Co., Wm. St. Louis, Mo.		36 38 44			
Russell & Stoll Co. New York, N. Y.		45	72			Vaile & Kimes..... Dayton, Ohio				93		Yale & Towne Mfg. Co..... New York, N. Y.			90		
Sackett Electric Co., H. I... Buffalo, N. Y.		36 43				Vanduzen Co., E. W. Cincinnati, Ohio				93		Yeomans Bros. Chicago, Ill.				93	
Sangamo Electric Co..... Springfield, Ill.		42										Zoar Battery Co..... Zoar, Ohio	10				
Schug Electrical Mfg. Co.... Detroit, Mich.	1 2 4 8 10	42 43 44 45	68 69 70 71 72 86 87	91 105													
Scott Electrical Co..... Newark, N. J.			63														
Seidler-Miner Electric Co... Detroit, Mich.		44 45															
Signalphone Alarm Co..... Milwaukee, Wis.		43 44				Vivax Storage Battery Co.. Chicago, Ill.	1 10 11										

Crouse-Hinds Company

Manufacturers of Electrical Appliances

MAIN OFFICE AND WORKS
SYRACUSE, N. Y., U. S. A.

NEW YORK
30 Church Street

BOSTON
201 Devonshire Street

CINCINNATI
18 East 4th Avenue

CHICAGO
417 South Dearborn Street

PRODUCTS—ELECTRIC DISTRIBUTION PANEL BOARDS AND CABINETS; METERING PANELS; SWITCHES; SWITCHBOARDS; CONDUITS (CONDUIT OUTLETS) AND FITTINGS; NORBITT RECEPTACLES AND ROSETTES, AND OTHER WIRING APPLIANCES

INTRODUCTORY—This presentation of our products describes and illustrates them in sufficient completeness to inform the architect of the merits and variety of our goods and enable him to specify same or recommend their employment in any work in which he is concerned.

We believe that THE ARCHITECT will be glad to know our goods thoroughly and have them presented to him in this practical form—fairly complete, yet free from all extraneous matter. He is called upon to specify a great deal of electric light work; and even in those cases where an electrical engineer is employed, or where the specifications come from elsewhere, the architect is generally instructed to exercise his *trained information* as to apparatus and detail.

SIZES AND PRICES—The great variety of capacities and combinations possible in all our products make it impractical to publish tables of sizes and prices in this place. Such tables are more for the use of electrical contractors and engineers than for the architect. They, however, will be gladly supplied on request, together with any other information desired.

PANEL BOARDS—TECHNICAL DESCRIPTION—The Crouse-Hinds panel boards are *unexcelled* in correct electrical and mechanical design, quality and materials, beauty of finish, strength and durability. The many varieties offered meet every condition as to wiring, *degree of control and protection* necessary. Each of its kind can be depended upon for the service for which it is intended. *Prices are low for the quality furnished.*

TYPES—We manufacture four types of panel boards, as follows:

TYPE "A" (125 and 250 volts)—Arranged for N. E. C. enclosed fuses and with or without knife switches in branches.

TYPE "D" (125 volts only)—Arranged for Edison plug fuses and with or without knife switches in branches.

TYPE "F" (125 and 250 volts)—Arranged for N. E. C. enclosed fuses and snap switches in branches.

TYPE "H" (125 volts only)—Arranged for Edison plug fuses and with snap switches in branches.

Any of the above types may have lug ends only for attaching the feeders direct; fuses on feeders, fuseless feeder switches, or fused feeder switches. Every type is made for 2 to 2-wire service and for Edison 3 to 2-wire service, each in single and double branch forms. Other variations are described under each illustration.

GENERAL SPECIFICATION—For the above four types these general specifications prevail:

SLATE BASE, FRAMES AND DOOR LININGS—For the regularly listed style the base consists of the highest grade black Monson

slate, $\frac{1}{8}$ " thick, free from flaws or metallic veins, and has rubbed oil finish. Frames and door linings, where used, are same slate as base. The frames are $\frac{1}{2}$ " thick and surround the base; the door linings are $\frac{1}{4}$ " thick. Panel boards, frames and door linings can be furnished of black-enameled slate, or of polished white Italian or blue Vermont marble at an extra charge.

COPPER PARTS—All current-carrying parts are made of the best grade of hard-drawn copper of 98% conductivity. All exposed metal parts are finished in polished copper, carefully lacquered, except on contact surfaces. If desired, copper work can be plain-finished, at 5% reduction in cost. All parts are proportioned upon a maximum current density of 1000 amperes per square inch cross-section.

SPACINGS are in accordance with the latest requirements of the National Board of Fire Underwriters.

CIRCUIT CONNECTIONS—All 2 to 2- and 3 to 2-wire panel boards are connected in the regular manner, adjacent poles of adjoining circuits being of the same polarity but fed by separate bars. All 3 to 2-wire panel boards are connected for the Edison 3-wire system, each branch circuit having one pole connected to the neutral busbar and the other to one of the two outside busbars.

Three to 2-wire panel boards are also furnished for connection for three-phase systems, if so ordered, without adding to the size or cost of the board.

CAPACITIES—Fuse-terminal branch circuits, with or without knife switches, are 30 amperes capacity. Snap-switch circuits are of 10 amperes capacity. Mains on all 2 to 2-wire, 125-volt, panel boards are figured at 6 amperes per circuit. All 2 to 2-wire, 250-volt, and 3 to 2-wire, 125-volt or 250-volt, panel boards are figured at 3 amperes per circuit.

FUSE ARRANGEMENT—Fuses are placed between the switch and the outgoing circuit, making the switch blades and fuses "dead" when the switch is open. They can be placed between the main bars and the branch switch without adding to the size or cost of board. Also, types "A" and "F" panel boards will be arranged with open-link fuses without extra cost.

CIRCUIT STRIPS—Branch strips are made of $\frac{1}{2}$ " x $\frac{1}{16}$ " copper, and direct-connected to bars without pillars, reducing number of parts and contact joints.

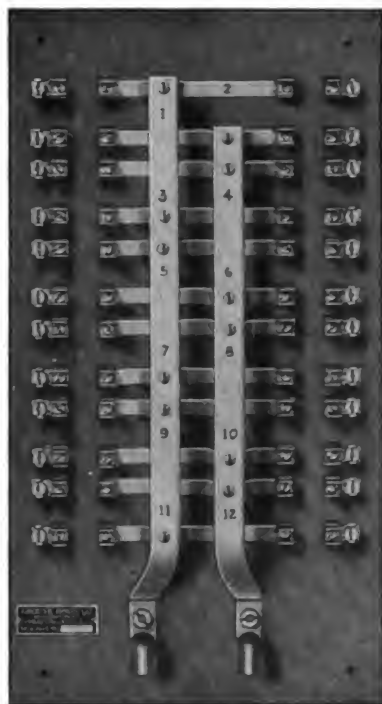
CIRCUIT SWITCHES—Knife switches on branch circuits of types "A" and "D" panel boards are of 30 amperes capacity and spacing, and equipped with substantial composition handles into which blades are cast. Blades are of $\frac{1}{2}$ " by No. 13 gauge copper. Hinge joints have compression spring washers. Snap-switch mechanisms on branch circuits of types "F" and "H" panel boards are of 10 amperes capacity, and any of the following makes will be furnished without change in cost of board: Arrow Electric Co. (Arrow E.), Hart & Hegeman Mfg. Co. (Hart), Perkins Electric Switch Mfg. Co. (Perkins). Switches of the Hart Mfg. Co. (Diamond H) will be furnished when called for, at extra cost. A special insulating, black-enameled casing covers switch mechanism and connections.

MAIN SWITCHES—Main switches are of substantial design and construction, and are regularly mounted at the bottom of the panel board, but will be mounted at the top, if desired, without adding to the size or cost of board.

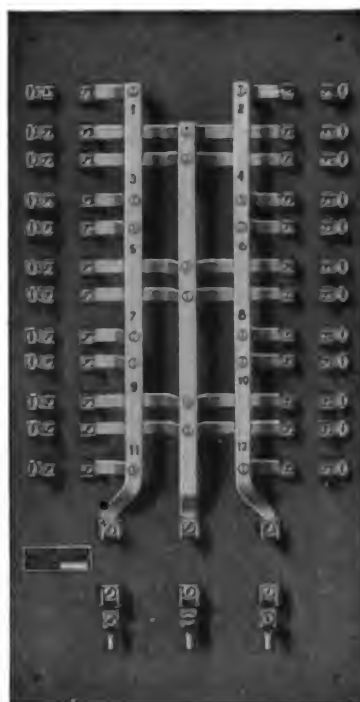
CHOICE OF A PANEL BOARD—What to choose is not entirely a matter of cost nor of N. E. C. requirement. For many installations the full complement of fuses and switches is not necessary nor demanded. The circumstances of service must determine the selection. But it should be remembered that, when panel board main switches and fuses, or circuit switches, or both are very desirable for good service, even though not required by the code, the extra cost involved is very small and should never be allowed to interfere with specifying the proper equipment.

TYPE "A" PANELS. FOR 125 AND 250 VOLTS

MADE IN 2 TO 2-WIRE AND 3 TO 2-WIRE, SINGLE OR DOUBLE-BRANCH FORMS



Mains—2-Wire, with Lugs

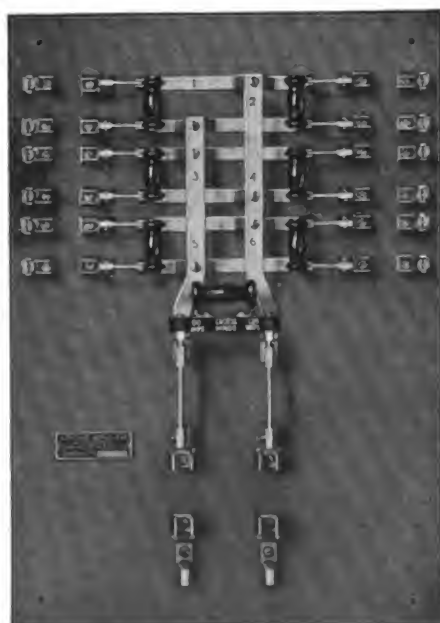


Mains—3-Wire, Fused

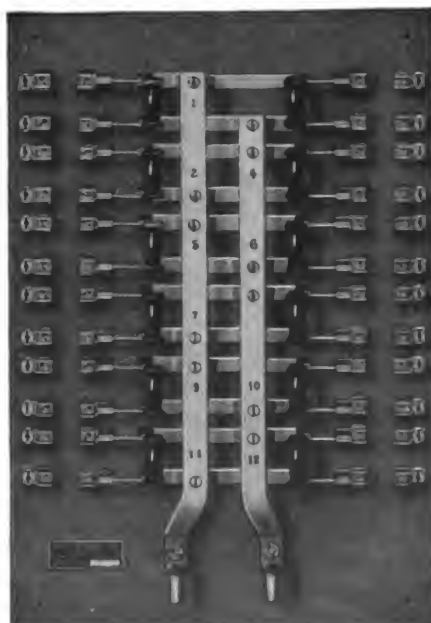


Mains—2-Wire, with Fuseless Switch

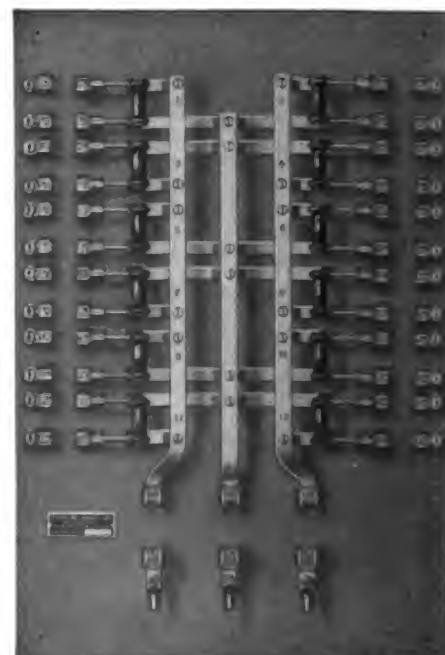
Branches—2-Wire, with Fuse Terminals for N. E. C. Enclosed Fuses



Mains—2-Wire, with Fused Switch



Mains—2-Wire, with Lugs

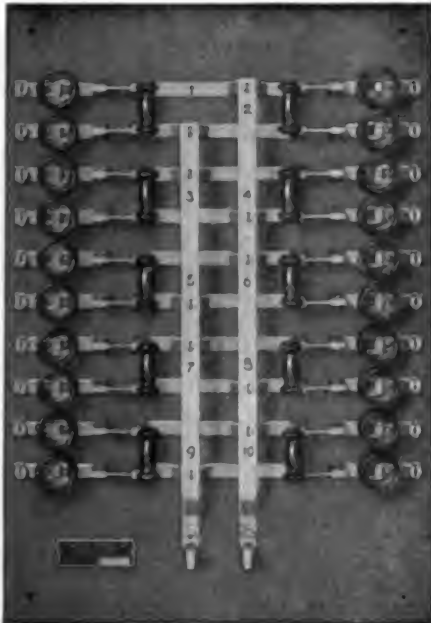


Mains—3-Wire, Fused

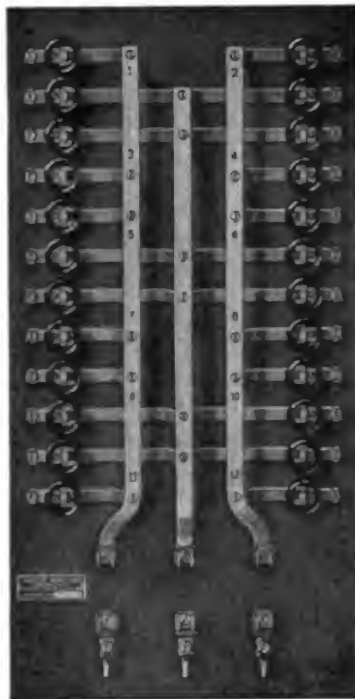
Branches—2-Wire, with Knife Switches Arranged for N. E. C. Enclosed Fuses

TYPE "D" PANELS. FOR 125 VOLTS ONLY

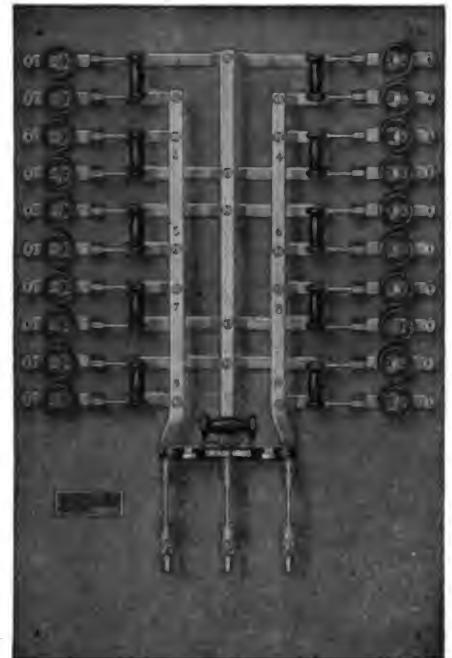
MADE IN 2 TO 2-WIRE AND 3 TO 2-WIRE, SINGLE OR DOUBLE-BRANCH FORMS



Mains—2-Wire, with Lugs
Branches—2-Wire, with Knife Switches
Arranged for Edison Plug Fuses



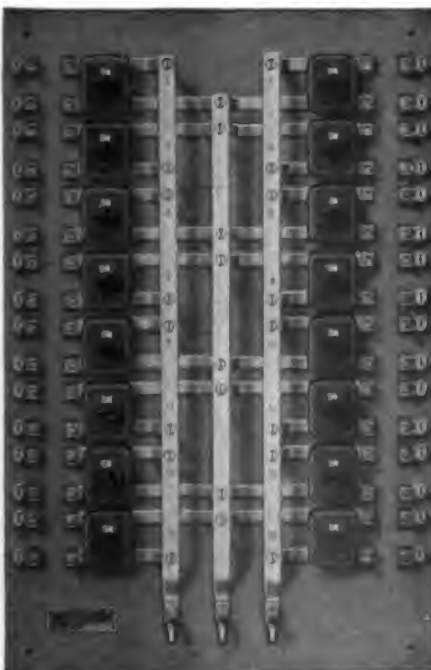
Mains—3-Wire, Fused
Branches—2-Wire, with Fuse Terminals for Edison Plug Fuses



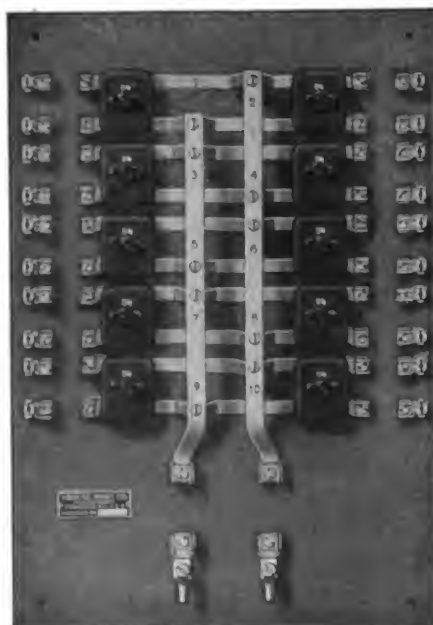
Mains—3-Wire, with Fuseless Switch
Branches—2-Wire, with Knife Switches
Arranged for Edison Plug Fuses

TYPE "F" PANELS. FOR 125 AND 250 VOLTS

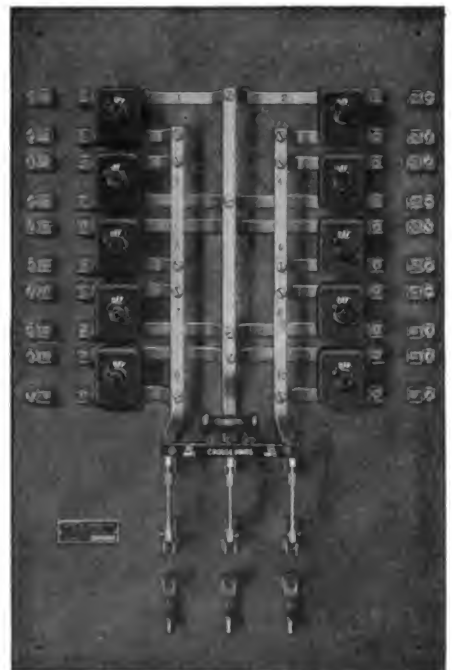
MADE IN 2 TO 2-WIRE AND 3 TO 2-WIRE, SINGLE OR DOUBLE-BRANCH FORMS



Mains—3-Wire, with Lugs



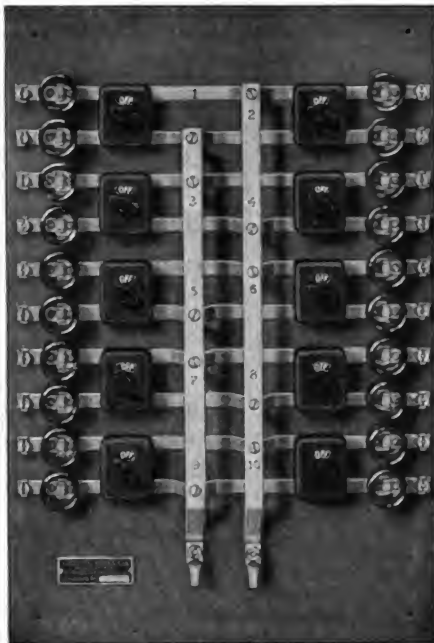
Mains—2-Wire, Fused



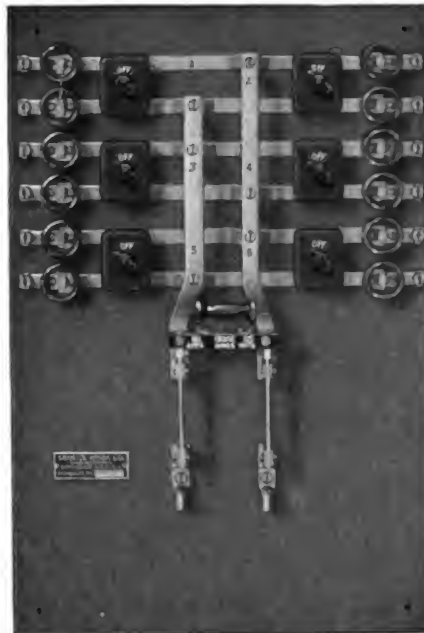
Mains—3-Wire, with Fused Switch

Branches—2-Wire, with 10 Amp. Snap Switches Arranged for N. E. C. Enclosed Fuses

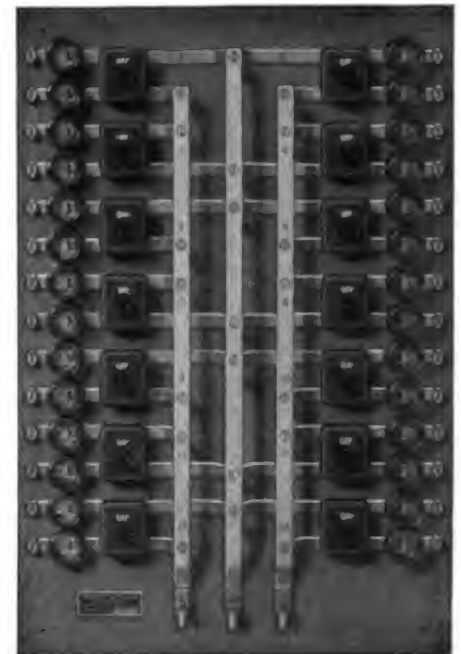
TYPE "H" PANELS. FOR 125 VOLTS ONLY
MADE IN 2 TO 2-WIRE AND 3 TO 2-WIRE, SINGLE OR DOUBLE-BRANCH FORMS



Mains—2-Wire, with Lugs



Mains—2-Wire, with Fuseless Switch



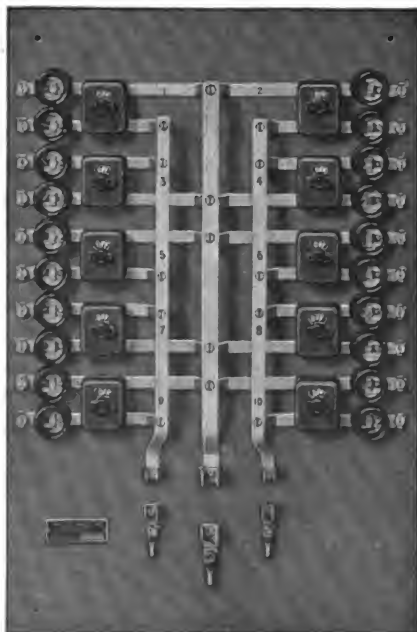
Mains—3-Wire, with Lugs

Branches—2-Wire, with 10 Amp. Snap Switches Arranged for Edison Plug Fuses

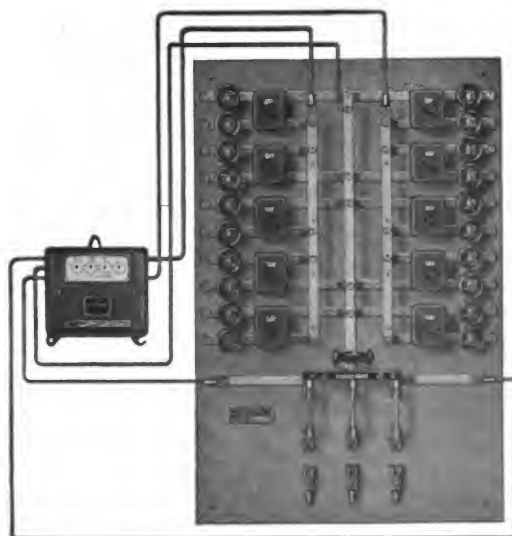
**THREE-WIRE CONVERTIBLE
PANELS—ALL TYPES**

**METER LOOPS FOR STANDARD PANEL
BOARDS, SINGLE OR DOUBLE-BRANCH FORMS**

**SERVICE SWITCHES, WITH CAB-
INETS, COMPLETE**



Type "H" 3 to 2-Wire Convertible Panel
If ordered, 3 to 2-Wire Panel Boards of any type will be furnished with convertible mains.

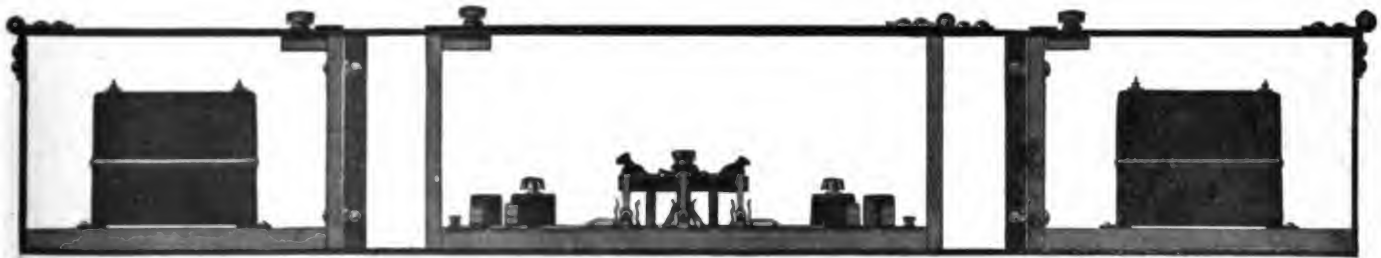
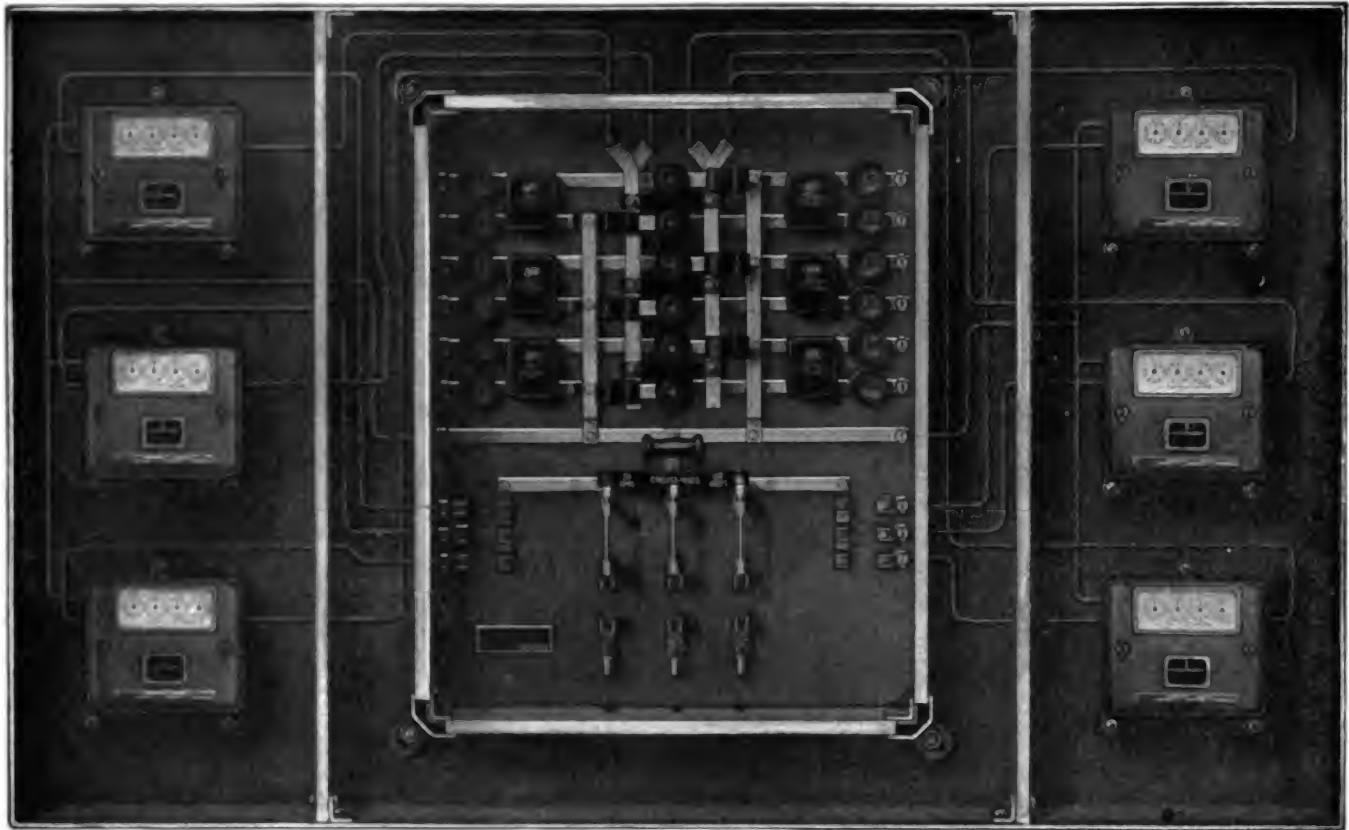


Type "H" 3 to 2-Wire Double-Branch Panel, with Meter Loops
The addition of Meter Loops does not change size of the Standard Panel Board.



Three-Pole, Single-Throw Service Switch (Fused at Hinge End) Mounted in Cabinet, Door Removed
The Switch is our Standard Single-Throw—250 volts—1-, 2-, 3- or 4-pole, arranged for N. E. C. Enclosed Fuses.

METERING PANELS



The MULTIMETER—3 to 2-Wire, Six-Circuit Panel of Type "H" Construction, Mounted in Cabinet Arranged for Six Meters

METERING PANELS—In all respects the general specifications for the Multimeter panel boards are the same as for our standard panel boards. The Multimeter meets the requirements for supplying current to different tenants, or users, through separate meters—occurring in large office buildings, warehouses, apartment houses, factories, etc.

It is the latest and most improved type of metering panel board, and permits the combination of any number of circuits with any meter, and the quick changing of the connections of any one meter without disturbance to the wiring for panel connections or of the building.

Connections between circuits and meters are made by means of clips with insulated handles. No tool of any sort is required in making changes.

"A.B.C." SYSTEMS

The Multimeter panel board can be of type "A," "D," "F" or "H" construction.

NOTE—In asking for information as to metering panels, it is necessary to give the following requirements: 1, number of circuits; 2, number of meter bars; 3, system; 4, voltage; 5, style of main connections; 6, style of fuses; 7, whether with or without switches (knife or snap) in branches; 8, complete description of cabinet.

CABINETS—Multimeter panel boards can be installed in our standard cabinets, when meters are to be mounted outside of cabinet; or in cabinets with special compartments for meters, as here illustrated.

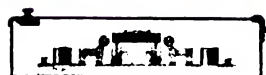
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STEEL AND WOOD CABINETS

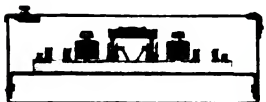
CABINETS—We illustrate herewith the various styles and combinations of our all-steel, steel-box and wood-front, and all-wood cabinets. All styles are made for both surface and flush-with-wall mounting. The steel and wood doors are *standard* construction. The width of the trims varies according to whether the box is for surface or flush mounting. The cabinets are neat, sub-

stantial in design and of the best material and workmanship.

The numerous sizes and combinations of boxes and trims forbid the giving here of full tables and prices. These data, as in the case with panel boards, are more for the engineer and contractor than the architect. They, however, will gladly be sent on request.



Type "AK" Cabinet
Combination of Type
"A" Steel Box and
Type "K" Steel
Trim



Type "CK" Cabinet
Combination of Type
"C" Steel Box and
Type "K" Steel
Trim



Type "DFP" Cabinet
Combination of Type
"DF" Wooden Box
and Type "P"
Wooden Trim



Type "BM" Cabinet
Combination of Type "B"
Steel Box and Type
"M" Steel Trim



Type "DSO" Cab-
inet
Combination of
Type "DS" Wood-
en Box and Type
"O" Wooden Trim



Type "AP" Cabinet
Combination of Type "A"
Steel Box and Type "P"
Wooden Trim



Type "CP" Cabinet
Combination of Type "C"
Steel Box and Type "P"
Wooden Trim



Type "ESQ" Cabinet
Combination of Type
"ES" Wooden Box
and Type "Q" Wood-
en Trim



Type "FSS" Cabinet
Combination of Type
"FS" Wooden Box
and Type "S" Wooden
Trim



Type "BN" Cabinet
Combination of Type "B"
Steel Box and Type "N"
Steel Trim



Type "BT" Cabinet
Combination of Type "B"
Steel Box and Type "T"
Wooden Trim



Type "AL" Cabinet
Combination of Type "A"
Steel Box and Type "L"
Steel Trim



Type "CL" Cabinet
Combination of Type "C"
Steel Box and Type "L"
Steel Trim

DETAILS OF CABINETS

STEEL CABINET DETAILS—All-steel boxes are made with and without wiring gutters at the sides or back. Attention is called to the fact that all our standard steel boxes are formed from one piece of No. 10 gauge sheet steel, notwithstanding the fact that the Underwriters permit the use of lighter gauge metal. The heavy-gauge steel assures absolute rigidity.

Boxes, doors and trims are unlined, and finished on both sides with two coats of P. & B. compound. Lining, and baked black-enamel finish will be furnished, at special price. In boxes that do not require side wiring gutters, two inches of clear space are allowed all around panel board, making slate lining unnecessary. Boxes are made in sizes to accommodate the various styles of panel boards.

Side wiring gutters are three inches wide and are formed by a frame of 1/2-inch oiled Monson slate surrounding the panel board. The back wiring gutter is formed by the panel board being fastened to two steel straps, one near each end of box, secured to sides. A two-inch space is thus left between panel board and back of box.

WOOD CABINET DETAILS—Wood boxes are made of plain kiln-dried white oak, 7/8-inch thick. The sides are either mitered at corners and secured with tongue and groove, or rabbeted and nailed. In some types the panel covers the entire back of box, which is lined on all four sides with 1/2-inch oiled Monson slate. In others, provision is

made for a wiring gutter at sides. In the latter cases a 1/2-inch oiled Monson slate frame surrounds the panel, and the gutters are lined at outer sides and back with 1/4-inch plain slate.

Boxes for surface mounting are painted on inside and outside with two coats of P. & B. compound. For flush mounting, the exposed outside faces are filled and varnished. Polished cabinet finish will be given, at extra cost. Boxes are made in sizes to accommodate the various styles of panels.

WOOD DOORS AND TRIMS—Wood doors and trims are made of plain, kiln-dried white oak, 7/8-inch thick, painted on inside faces with two coats of P. & B. compound and filled and varnished on exposed faces and edges; cabinet finish at extra cost. Doors and trims are lined either with 1/4-inch oiled slate or with No. 16 gauge sheet steel. The steel-lined door has a black-enamel finish. The trim is painted, with two coats, whether lined or unlined. Doors have square mortised joints and raised panel, and are equipped with substantial spring-catch lock and brass escutcheon and hinges.

Doors can be furnished with either double-thick, plain plate or beveled plate glass panels, at extra cost, but we do not recommend glass doors for cabinets.

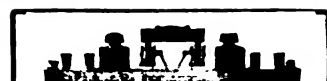
SPECIAL FINISHES—Wood boxes, doors and trims are regularly made of plain white oak, finished in natural color; but hard pine, cypress or ash will be furnished at the same price if specifically ordered. Quartered white oak, maple, birch, white pine, mahogany, bird's-eye maple, black walnut, cherry or curly birch also will be furnished, at various advances in price.



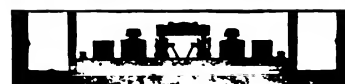
Type "A" Steel Box,
Showing Panel Installed



Type "C" Steel Box,
Showing Panel Installed



Type "B" Steel Box, Showing
Panel and Slate Frame



Type "EF" Wooden Box,
Showing Panel and
Slate Frame



Type "DS" Wooden Box,
Showing Panel Installed



Type "DF" Wooden Box,
Showing Panel Installed

NOTE—Neither Panel nor Slate Frame is included with Box

CONDULETS

CONDULETS—We manufacture a vast variety of Condulets to meet all exposed conduit outlet requirements. While made primarily for rigid installations, Condulets can be used with flexible steel conduit, in conjunction with any standard type of conduit bushing or connector. Many styles of Condulets are made for combination conduit and molding work, and for molding work alone. Full lines of covers for such Condulets as require covers are also made.

The general sizes of conduit for which Condulets are made are: $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4 inches.

The great variety of these goods makes it impractical to give tables and price lists in this place. These data are more for the electrical engineer and contractor than the architect. They, however, will gladly be sent on request.

The following illustrations show one or more of the styles in which each type of Condulet is made:

Type "M" Condulets are for molding work only. Porcelain and metal covers and porcelain insulators attached. Made in various styles, including 2- or 3-wire, straight-through, with or without branches.



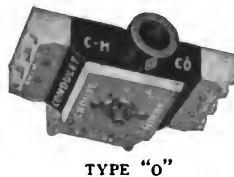
TYPE "M"

Type "N" Condulets are for stucco work, using flush pocket receptacles. Complete with telescope covers attached, to meet variation in thickness of plaster work. Sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch conduit.

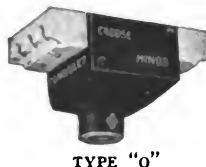


*TYPE "N"

Type "O" Condulets are for combination conduit and molding work. Complete with porcelain and metal covers and porcelain insulators. Made for 2- or 3-wire, straight-through, with or without branches. Sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch conduit.



TYPE "O"



TYPE "O"



†TYPE "P"

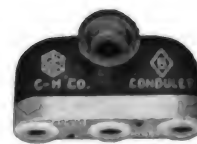
Type "P" is for electroliers, combination gas and electric fixtures, clusters, etc., to supersede unsightly outlet boxes in cases of exposed conduit wiring. Sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch conduit.

*Series includes dead-end, through-feed, L, T and X styles.
†Series includes dead-end, through-feed, L, T, X and single top hub styles.

"A.B.C." SYSTEMS



TYPE "A"



TYPE "B"

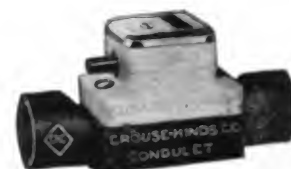


TYPE "C"

Types "A," "B" and "C" take any of 18 styles of porcelain and metal covers and Conduletto fittings. Sizes for $\frac{1}{2}$ - to 4-inch conduit, inclusive.



TYPE "CH"



TYPE "CHC"

Types "CH" and "CHC" are for Cutler-Hammer push button switches—7100, 7101, 7102 and 7103. Sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch conduit.



TYPE "D"



TYPE "DF"



TYPE "E"

Types "D," "DF" and "E" take any of 18 styles of porcelain and metal covers and Conduletto fittings. Types "D" and "E" made in sizes for $\frac{1}{2}$ - to 4-inch conduit, inclusive. Type "DF" is for pipe lamp brackets, floor standards and similar installations. Sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch conduit.



Front View.



Side View.

TYPE "F"



TYPE "FF"

Type "F" is made in sizes for $\frac{1}{2}$ - to 4-inch conduit, inclusive; type "FF" in sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ -, 1- and $1\frac{1}{4}$ -inch conduit. Types "F" and "FF" are service entrance fittings. Type "F" takes covers with from 1- to 8-wire holes, inclusive. Type "FF" mounts fuses for 2-, 3- or 4-wire cut-outs.



TYPE "FD"

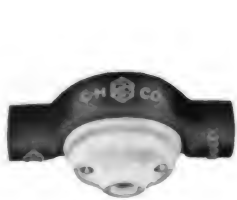


TYPE "FSC"

Type "FD" is for deep-style and type "FSC" is for shallow push-button or flush rotary switches. Both types are made in through-feed and dead-end forms. Sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch conduit.

Continued on next page

CONDULETS



*TYPE "G"



TYPE "GT"



TYPE "H"

Condulets of "G" and "H" series have adjustable swivels for snap switches (5, 10 and 20 amperes); take any of 10 styles of porcelain and metal covers and many round base fittings. Type "HA" has single hub on back of casting. Sizes for 1/2-, 3/4- and 1-inch conduit.

Type "R" is designed for the mounting of arc-lamp hanger boards on exposed conduit systems. Complete with necessary fastening screws, but without hanger board. Sizes for 1/2-, 3/4- and 1-inch conduit. Made in two forms of dead-end, through-feed, L, T and X styles.



TYPE "R"

Type "S" takes pony receptacles, clamp receptacles, rosettes and polarity plug receptacle—Hubbell 5605. Complete with cover and necessary fastening screws, but without receptacle. Sizes for 1/2-, 3/4- and 1-inch conduit.



*TYPE "S"



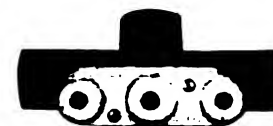
*TYPE "J"



TYPE "JB"



TYPE "K"



TYPE "T"



TYPE "TL"

Condulets of "J" and "K" series are for both indoor and outside installations. Used with special line of porcelain fittings. Numerous angular types. Sizes for 1/2-, 3/4- and 1-inch conduit.

Types "T," "TL" and "TR" take any of 18 styles of porcelain and metal covers and Conduletto fittings. Type "T" in sizes for 1/2- to 4-inch mains and various sizes of branches; types "TL" and "TR" in 1/2-, 3/4- and 1-inch mains and 1/2-, 3/4- and 1-inch branches.



TYPE "TR"



TYPE "LB"



TYPE "LF"



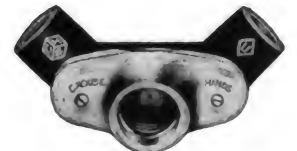
TYPE "LL"



TYPE "LR"

Types "LB," "LF," "LL" and "LR" are right- and left-hand elbow Condulets. They take any of 18 styles of porcelain and metal covers and Conduletto fittings. Sizes for 1/2- to 4-inch conduit, inclusive.

Type "U" takes same covers and fittings; and is made in same sizes of mains as type "T," referred to immediately above.



TYPE "U"

Type "V" with vapor-proof globe and guard. Made in two sizes—for incandescent lamps not over 2 3/4 inches in diameter and 6 inches in length, and for lamps not over 3 3/4 inches in diameter and 8 inches in length. Each size made in two forms of dead-end, in through-feed, L, T and X styles, for 1/2-, 3/4- and 1-inch conduit.



TYPE "V"



†TYPE "QHC"

Type "QHC" is weatherproof; for standard thumb-knob snap switches. Complete with Swivel for switch and necessary screws, but without switch. Sizes for 1/2-, 3/4- and 1-inch conduit. Arranged for 5-, 10- and 20-ampere switches. Cover of Condulet can be secured by padlock.

Of similar construction, the "QK" series accommodate clock key and lock snap switches of the same capacities.

Type "W" is for use with Hubbell attachment plug, new type 5469. Complete with Cover, but without plug. Sizes for 1/2-, 3/4- and 1-inch conduit.



*TYPE "W" WITH
HUBBELL
ATTACHMENT PLUG

*Series includes dead-end, through-feed, L, T and X styles.

†Series includes two forms of dead-end, through-feed, L and T styles.

CONDULETS

Type "X" takes any of 18 styles of porcelain and metal covers and Conduletto fittings. Size for $\frac{1}{2}$ - to 4-inch mains with various sizes of branches.



TYPE "X"



TYPE "Zs"



TYPE "ZX"



TYPE "YD"



TYPE "YC"

The "Y" series includes types "YC," "YS," "YD" and "YX," for housing plug or enclosed fuse cut-outs of 3- to 30- or 31- to 60-ampere capacity.

Type "YC" is for 2- and 3-wire main-line cut-outs, and is made in sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ -, 1- and $1\frac{1}{4}$ -inch mains.

Type "YS" is for 2 to 2- and 3 to 3-wire, single branch, through-feed cut-outs, and is made in sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ -, 1- and $1\frac{1}{4}$ -inch mains and $\frac{1}{2}$ -inch branches.

Type "YD" is for 2 to 2-, 3 to 2- and 3 to 3-wire, double-branch, dead-end cut-outs, and is made in sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch mains and $\frac{1}{2}$ - and $\frac{3}{4}$ -inch branches.

Type "YX" is for 2 to 2-, 3 to 2- and 3 to 3-wire, double-branch, through-feed cut-outs, and is made in sizes for $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch mains and $\frac{1}{2}$ - and $\frac{3}{4}$ -inch branches.

Each Condulet is furnished complete with adjustable plate for cut-out and all necessary fastening screws, but without cut-out.

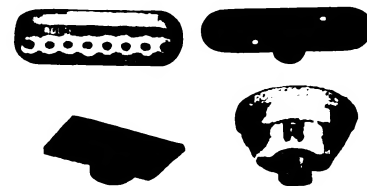
The "Z" series includes types "ZC," "ZS," "ZD" and "ZX," for housing plug or enclosed fuse cut-outs, of 3- to 30-ampere capacity, and mounting 5-, 10- or 20-ampere snap switches.

Type "ZC" is for 2- and 3-wire main line cut-outs and single switch. Type "ZS" is for 2 to 2- and 3 to 3-wire, single-branch, through-feed cut-outs and single switch. Type "ZD" is for 2 to 2-, 3 to 2- and 3 to 3-wire, double branch, dead-end cut-outs and two switches. Type "ZX" is for 2 to 2-, 3 to 2- and 3 to 3-wire, double-branch, through-feed cut-outs and two switches on branches.

Hubs are made in sizes to fit $\frac{1}{2}$ - to $1\frac{1}{4}$ -inch mains, inclusive, and various sizes of branches.

INTERCHANGEABLE COVERS FOR CONDULETS

Made of porcelain with 1- to 8-wire holes, for weatherproof socket, or with male or female nipple, in various shapes and sizes to suit several types of Condulets; also made of metal without opening or with male or female nipples.



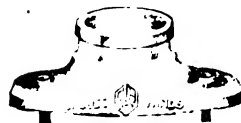
COVERS FOR CONDULETS

Condulet covers of the same size and shape are interchangeable on Condulets of corresponding size.

CONDULETTO FITTINGS



RECEPTACLE WITH SHADE-HOLDER GROOVE



RECEPTACLE WITHOUT SHADE-HOLDER GROOVE

They are made in sizes to fit $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-inch types "A," "B," "C," "D," "E," "F," "L" series, "T" series, "U" and "X" Condulets.

Initial electrical contact to circuit wires is made by means of two binding screws on top of base. Base is secured by screws to lugs on rim of Condulet. Cap is fastened to base by two screws, that in cases of rosettes complete electrical connection. These screws are so constructed that they can not fall out during installation.



CORD ROSETTE



FIXTURE ROSETTE



CONDULETTO RECEPTACLE WITH SHADE-HOLDER GROOVE ON TYPE "C" CONDULET (EXPLODED VIEW)

"A.B.C." SYSTEMS

Continued on next page

NORBITT CONDULET FITTINGS



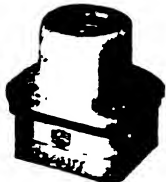
RECEPTACLE WITH
SHADE-HOLDER GROOVE



CORD ROSETTE



FIXTURE ROSETTE



RECEPTACLE WITHOUT
SHADE-HOLDER GROOVE



Norbitt Condulet Fittings are made as receptacles with and without shade-holder groove, cord rosette and fixture rosette, but in one size only, and fit all sizes of "J" and "K" series of Condulets.

Base is secured to Condulet by a screw through the center. Cap is secured to base by a screw, which also complete the electrical connection. All electrical contacts are covered by porcelain. No taps or taped joints.



HUBBELL ATTACHMENT
PLUG RECEPTACLE



Crouse-Hinds Hubbell Attachment Plug Receptacle is made in one size only, and fits all sizes of "J" and "K" series of Condulets. All electrical contacts are covered by porcelain. No taps or taped joints.

NORBITT MOLDING FITTINGS



RECEPTACLE WITH
SHADE-HOLDER GROOVE



CORD ROSETTE



FIXTURE ROSETTE



RECEPTACLE WITHOUT
SHADE-HOLDER GROOVE

Norbitt Molding Fittings are made in four styles—receptacle with shade-holder groove, receptacle without shade-holder groove, cord rosette and fixture rosette. Each fitting is in two parts—a base and a cap. Base is secured to molding by screw through center. All electrical contacts are covered by porcelain. No taps or taped joints.

"A.B.C." SYSTEMS

NORBITT CONDUIT BOX FITTINGS



RECEPTACLE WITH
SHADE-HOLDER GROOVE



CORD ROSETTE



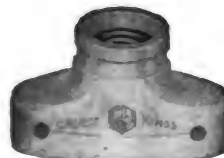
FIXTURE ROSETTE



RECEPTACLE WITHOUT
SHADE-HOLDER GROOVE

Norbitt Conduit Box Fittings are made in four styles—receptacle with shade-holder groove, receptacle without shade-holder groove, cord rosette and fixture rosette. Each fitting is in two parts—a base and a cap. Base is secured to bottom of box by screw through center. All electrical contacts are covered by porcelain. No taps or taped joints.

NORBITT CLEAT FITTINGS



RECEPTACLE WITH
SHADE-HOLDER GROOVE



CORD ROSETTE



FIXTURE ROSETTE



RECEPTACLE WITHOUT
SHADE-HOLDER GROOVE
(Exploded View)

Norbitt Cleat Fittings are made in four styles—receptacle with shade-holder groove, receptacle without shade-holder groove, cord rosette and fixture rosette. Each fitting is in two parts—a base and a cap. Base is secured to backing by two screws. All electrical contacts are covered by porcelain. No taps or taped joints.

NOTE.—In all the Norbitt fittings shown on this page, initial electrical connection to circuit wires is easily and securely made by means of two binding screws on the top of the base. The cap is secured to the base by two screws which are so constructed that they cannot fall out during installation. These two screws also complete the electrical connection.

The Safety Insulated Wire & Cable Company

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NEW YORK

Branches

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BOSTON

CHICAGO

SAN FRANCISCO

PRODUCTS—RUBBER-INSULATED WIRES AND CABLES for House Wiring, Transmission Work, Telephone and Fire and Police Systems

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RUBBER-INSULATED FLEXIBLE CONDUCTORS, LAMP AND PORTABLE CORDS, STAGE AND BORDER LIGHT CABLES, ELEVATOR CONTROL AND LIGHT CABLES



"WHITEHALL" 30% PARA—Where necessary, by reason of the importance or special nature of an installation, to have the best grade of rubber insulation obtainable, we advise the use of our "Whitehall" brand, which contains 30% Para rubber.

SPECIAL CABLES—Special cables, rubber or paper-insulated, designed and manufactured for any service, to 50,000 volts.

"SAFETY SEAMLESS" WIRES AND CABLES—

The trade name "Safety Seamless" is attached to all our wire and cable products and identifies them from other goods on the market.

In addition we have special names, *registered*, to designate particular goods. All these names stand for excellence of product throughout the world.

"RUBY CORE," NEW NATIONAL CODE STANDARD—Safety "Ruby Core" wire was designed to meet the growing demand for a high grade rubber-covered wire at a moderate price.

Architects and Engineers by specifying "Ruby Core" are assured of securing such a wire, and also one that will more than fulfill all the exacting requirements of the new specifications of the National Board of Fire Underwriters, effective January 1, 1912.

"A.B.C." SYSTEMS



DUPLEX "RUBY CORE"



"WHITEHALL" BRAND STRANDED CONDUCTOR. DOUBLE-BRAIDED



STRANDED CONDUCTOR, PAPER-INSULATED AND LEAD-COVERED

EXPERIENCE AND QUALITY—Over twenty-five years' experience in the manufacture of insulated wires and cables has placed us in a position to meet all varied and exacting demands of the trade for goods of quality and durability.

EXPERT ADVICE—Our Engineering Department is ready at all times to render assistance or furnish advice on special problems.

CONSTRUCTION DEPARTMENT—Complete underground conduit and cable systems designed, built and equipped by our Construction Department.

The Bryant Electric Company

The Perkins Electric Switch Manufacturing Co.



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(Reg. U.S. Pat. Off.)

MAKERS OF



INTERCHANGEABLE BRASS-SHELL, KEY, KEYLESS AND PULL SOCKETS
THE "NEW WRINKLE" LINE



SINGLE-, DOUBLE- & TRIPLE-POLE, THREE- & FOUR-POINT, TWO- & THREE-CIRCUIT ELECTROLIER, TWO- & THREE-SPEED FAN MOTOR, 250-VOLT SNAP SWITCHES

INTERCHANGEABLE KEY, KEYLESS AND PULL PORCELAIN SOCKETS



SINGLE- & TWO-BUTTON PUSH SWITCHES
ROTARY FLUSH WALL SWITCHES



WEATHERPROOF SOCKETS



FLUSH SWITCH PLATES IN REGULAR AND SPECIAL DIMENSIONS

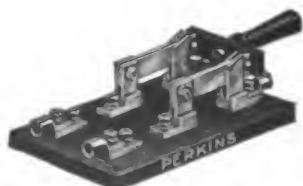
RECEPTACLES



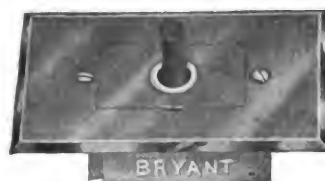
PENDENT, PULL AND CEILING SWITCHES



MINIATURE SOCKETS AND RECEPTACLES



KNIFE SWITCHES



BASEBOARD RECEPTACLES AND ATTACHMENT PLUGS

FUSES



No. 3140.

This is an illustrated index of the
Bryant-Perkins 122-page Catalog—
"A VERITABLE TEXT-BOOK OF THE WIRING INDUSTRY"
Send for a copy

The Trumbull Electric Mfg. Co.

Manufacturers of Panels and Switch Boards and Other Electrical Supplies

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Sales Offices

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PRODUCTS—PANEL BOARDS AND CABINETS; SWITCH BOARDS; KNIFE SWITCHES; SERVICE BOXES; FLUSH RECEPTACLES, CUT-OUTS, ROSETTES, and other ELECTRICAL SUPPLIES

SUPPLY FACILITIES—We can offer the **best possible service** for the reason that we carry in stock, wrapped for immediate shipment, a full assortment of the Panels which are most in demand. For others we have the parts already assembled and the slate in stock, so that the finished Panel can be shipped at short notice.

TRUMBULL PANEL BOARDS—SPECIAL FEATURES
—The following descriptive details are either in whole or in part **entirely characteristic** of our Panels as distinct from those of other manufacturers:

1. All metal on switches and branch bars is of 30-Ampere Capacity, although spaced for 10 Amperes, and **will meet 30-Ampere specifications**, if spaced accordingly.

2. Hinge Bolts are **spun over** and hinges **cannot loosen**.

3. Our panels are equipped with the Self-adjusting Return Bend Double U Contact Clips. The construction of these is such that the resiliency in the copper tends to hold a close contact with the switch blade. Furthermore, if they should ever get jammed or bent in any way, they can be adjusted readily with a blow of the hammer without expert or factory assistance.



COMPOSITION SPOOL HANDLE

4. In the composition spool handle (shown by cut in cross-section) a threaded brass rod is molded in each end which secures the screws and makes this handle just as firm as if the blade were molded into the handle itself, with this important

advantage over that form of construction: if one of the handles with molded blades should get broken, an **entirely new set of blades** must be mounted. In our construction a **new handle only** need be substituted.

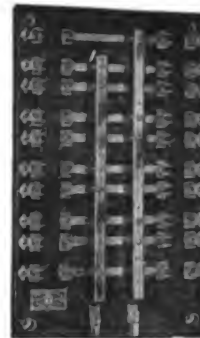
In addition we are able to **spin over the hinge bolts**, which is impractical with the molded handle, because, in the case of a broken handle, an entire new switch (hinge posts and all) is necessary. This means dismounting the panel and doing expert assembling, with consequent inconvenience, delay and expense.

5. On all panels for enclosed fuses we use a new-design washer head screw, being a washer and screw combined, but in such a way that screw may be turned without turning washer. This makes it easier to wire and overcomes the objection to using light metal for tapping.

6. Panels are all on **1-inch slate**—not $\frac{3}{4}$ -inch, as used by some manufacturers.

7. 3-2 Wire Panels are of same width as 2-2 wire. Thus they take a narrower box and the **cost of Box and Trim is materially reduced**.

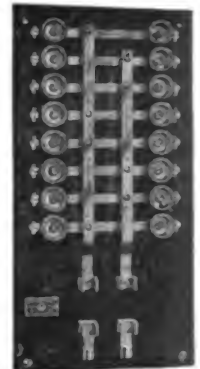
"A.R.C." SYSTEMS



TYPE "E"
WITH MAIN LUGS
2 to 2-Wire or 3 to 2-Wire
Mains, Double Branches,
N. E. C. Enclosed Fuses in
Circuits



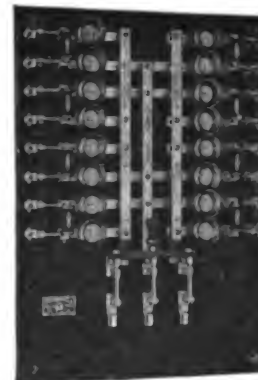
TYPE "ES"
FUSED SWITCH IN MAINS
2 to 2-Wire or 3 to 2-Wire
Mains, Double Branches,
N.E.C. Enclosed Fuses and
Switches in Circuits



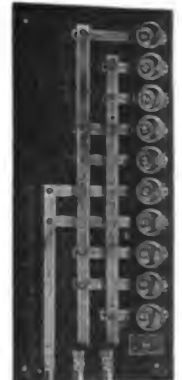
TYPE "P"
FUSES IN MAINS
2 to 2-Wire or 3 to 2-Wire
Mains, Double Branches,
N.E.C. Plug Fuses in Cir-
cuits



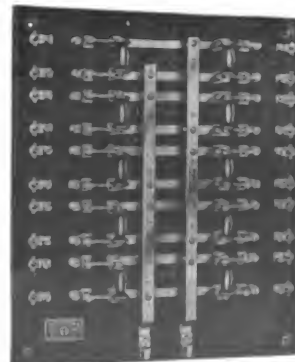
TYPE "EE"
WITH MAIN LUGS
2 to 2-Wire or 3 to 2-Wire
Mains, Single Branch, N.
E.C. Enclosed Fuses in
Circuits



TYPE "PS"
SWITCH IN MAINS
2 to 2-Wire or 3 to 2-Wire
Mains, Double Branches,
N.E.C. Plug Fuses and
Switches in Circuits



TYPE "PP"
WITH MAIN LUGS
2 to 2-Wire or 3 to 2-Wire
Mains, Single Branch, N.
E.C. Plug Fuses in Cir-
cuits



TYPE "OS" WITH MAIN LUGS
2 to 2-Wire or 3 to 2-Wire Mains,
Double Branches, Switches and Open-
Link Fuses in Circuits



TYPE "ESS" WITH MAIN LUGS
2 to 2-Wire or 3 to 2-Wire Mains,
Double Branches, N.E.C. Enclosed Fuses
and Snap Switches in Circuits

Continued on next page

Our Panels will average from 1½ to 3½ inches narrower and from 1 to 5 inches shorter than other well-known panels on the market, for equal capacity.

SPECIAL PANELS—We design and manufacture at shortest notice every form of Special Panel as may be called for in Specifications. All switches furnished will have our latest improvements.

SPECIFICATION DIRECTIONS—Specifications for special Panels should include the following data: 1. Number of circuits. 2. 2- or 3-wire mains. 3. Plain or polished finish. 4. N.E.C. plug or open-link fuse type. 5. Voltage. 6. Whether mains enter at top or bottom. 7. If single branch panels, which side mains enter.

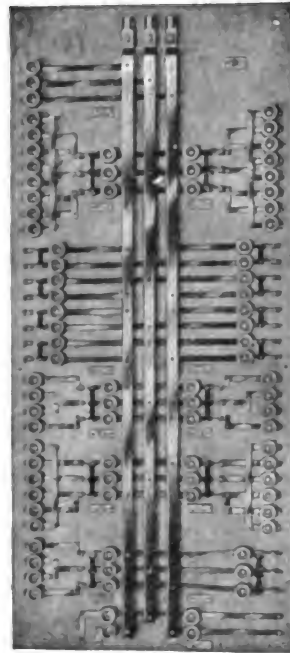
Also specify whether you require: 8. Fuses in mains. 9. Switch in mains. 10. Fused switch in mains. 11. Meter loop. 12. Slate frames or door linings. 13. Continuous mains or busbars; if continuous mains, specify additional ampere capacity required.

TYPES—We show eight Standard Types of Panel Boards which, by combination of features, illustrate and cover every variety of Standard Panel Board we construct. The descriptions are given under the cuts.

CABINETS, BOXES AND TRIMS—It is necessary to specify whether cabinets wanted are to be **Wood, Steel, Flush, Surface** (Box mounted on face of wall), or with **Gutter or No Gutter**. Gutter Steel Boxes are regularly equipped with Knockouts and Patented Conduit-Hole Closer. We have an improved method of securing Trim to Box by means of a **Special Clamp** used in place of a tapped hole and screw, thus saving time and labor in mounting, and permitting interchange of Trims of same size, etc. All **Styles and Sizes** can be built to order on short notice.

PANEL CIRCUIT PARTS—We offer a complete line of Panel Switches and other circuit parts for those who wish to build their own panels. These are carried in stock and can be shipped at once. It is often more economical for customers at considerable distance from our factory to adopt this method than to buy the finished boards.

PRICES—Our Catalogs contain prices and discounts for all of our products, including the parts thereof, and same; together with further required information, estimates, etc., will be forwarded on application.



SPECIAL DESIGN—CHURCH PANEL



SURFACE WOOD CABINET COMPLETE, WITH GUTTER

FLUSH WOOD CABINET COMPLETE



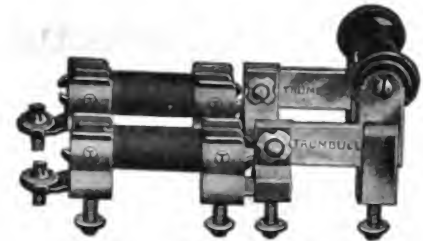
STEEL DOOR AND TRIM ONLY. COVERED WITH SHEET BRASS



STEEL CABINET COMPLETE, SURFACE TYPE. NO GUTTER



STEEL CABINET COMPLETE. GRADE A



SWITCH EQUIPPED FOR N.E.C. FUSES

LIST OF PANEL BOARDS CARRIED IN STOCK

TYPE "E," WITH MAIN LUGS			
2-2 WIRE		3-2 WIRE	
CAT. NO.	CKTS.	CAT. NO.	CKTS.
15001	4	15021	4
15002	6	15022	6
15003	8	15023	8
15004	10	15024	10
15005	12		

TYPE "ES," WITH MAIN LUGS			
2-2 WIRE		3-2 WIRE	
CAT. NO.	CKTS.	CAT. NO.	CKTS.
15321	4	15341	4
15322	6	15342	6
15323	8	15343	8
15324	10	15344	10
15325	12	15345	12
15326	14	15346	14
15327	16	15347	16
15328	18	15348	18
15329	20	15349	20
		15350	22
		15351	24

TYPE "ES," FUSES IN MAINS			
		3-2 WIRE	
CAT. NO.	CKTS.	CAT. NO.	CKTS.
		15381	4
		15382	6
		15383	8
		15384	10
		15385	12

TYPE "ES," FUSED SWITCH IN MAINS			
2-2 WIRE		3-2 WIRE	
CAT. NO.	CKTS.	CAT. NO.	CKTS.
15441	4	15461	4
15442	6	15462	6
15443	8	15463	8
15444	10	15464	10
		15465	12

TYPE "P," WITH MAIN LUGS			
2-2 WIRE		3-2 WIRE	
CAT. NO.	CKTS.	CAT. NO.	CKTS.
15641	4	15661	4
15642	6	15662	6
15643	8	15663	8
15644	10	15664	10
15645	12	15665	12
15646	14		
15647	16		

TYPE "PS," WITH MAIN LUGS			
2-2 WIRE		3-2 WIRE	
CAT. NO.	CKTS.	CAT. NO.	CKTS.
15961	4	15981	4
15962	6	15982	6
15963	8	15983	8
15964	10	15984	10
15965	12	15985	12
15966	14	15986	14
		15987	16

All these carried in stock, wrapped for immediate shipment.

"A.E.C." SYSTEMS

Atlantic Insulated Wire and Cable Co.

Manufacturers of Rubber-Insulated Wires and Cables



120 LIBERTY STREET
NEW YORK, N. Y.

Factory: STAMFORD, CONN.

Agencies:

CHICAGO, ILL., Atlantic Insulated Wire and Cable Co., 1243 Peoples Gas Building	
LOUISVILLE, KY. A. & C. B. Robinson, 503 Keller Building	LOS ANGELES, CAL. B. F. Kierulff, Jr., & Co., 120 S. Los Angeles St.
SAN FRANCISCO, CAL. Hand & Jones, 151 New Montgomery St.	DENVER COLO. Western Engineering Specialties Co., 1732 Glenarm St.
ST. LOUIS, MO. A. S. Doxsee, 1502 Chestnut St.	SALT LAKE CITY, UTAH A. T. Egan, Felt Building
SEATTLE, WASH. Northwestern Supply Co., 115 Prefontaine Place	PORTLAND, ORE. Frank Haemar, Mohawk Building



PRODUCTS—WIRES AND CABLES, Interior, Aerial, Underground and Submarine. All sizes, every Service

NEPTUNE—Highest-grade intermediate insulation. Compounded of 30% Para and India rubbers under our own specifications. Made for service and long life at a moderate cost, the result of years of experience. Compare so-called 30% Para insulation, built under the technical engineers' specifications, with Neptune, continue the comparison for endurance and service as well as cost.

Approved by Underwriters. Every coil of wire, large or small, guaranteed to the test described following:

TEST—A sample of vulcanized compound, not less than four (4) inches in length, shall be cut from the wire and marks placed on it two (2) inches apart;

The sample shall be stretched until the marks are six (6) inches apart, and then immediately released;

One minute after such release the marks shall be not more than two and three-eighths ($2\frac{3}{8}$) inches apart;

The sample shall then be stretched until the marks are nine (9) inches apart, before breaking.

TRITON—A distinctive intermediate insulation. Compounded on lines similar to Neptune. Designed to meet the requirements of engineers, architects and contractors who demand high-grade, long-service insulation of moderate cost. This wire has a given and established test that determines a constant grade, eliminating competition with wires sold under a specified brand without specifications and changed as necessary to meet competitive prices.

Approved by Underwriters. Triton contains 25% of India rubber and is guaranteed to the stretch test described following:

TEST—A sample of vulcanized compound, not less than four (4) inches in length, shall be cut from the wire and marks placed on it two (2) inches apart;

The sample shall be stretched until the marks are six (6) inches apart, and then immediately released;

One minute after such release the marks shall be not more than two and one-half ($2\frac{1}{2}$) inches apart;

The sample shall then be stretched until the marks are eight (8) inches apart, before breaking.

COMMERCIAL CODE WIRE—A reliable insulation compounded to meet the new rules and regulations of the National Board of Fire Underwriters. It contains over 20% of rubber gum and meets all the specified electrical, physical and chemical tests by a safe margin, and we recommend it when code insulation is specified. Atlantic insulation has always been a live and

stretchy compound, and our code insulation has been compounded on lines of longevity which only years of experience can assure. There is no chance of trouble with Underwriters or inspectors in using our code.

Approved by the Underwriters and guaranteed to the stretch test described following:

TEST—A sample of vulcanized compound, not less than four (4) inches in length, shall be cut from the wire and marks placed on it two (2) inches apart;

The sample shall then be stretched until the marks are five (5) inches apart, and then immediately released;

One minute after such release the marks shall be not more than two and one-half ($2\frac{1}{2}$) inches apart;

The sample shall then be stretched until the marks are six (6) inches apart, before breaking.

THIRTY PER CENT. PARA—Our insulation meets all known specifications of engineers, specialists and theorists, and contains 30% of actual Up-river fine dry Para rubber consigned directly to our factory. We claim it to be the best and longest-lived insulation made, and we recommend it when such expensive insulation is necessary or demanded.

Approved by the Underwriters. Guaranteed to the stretch test described following:

TEST—A sample of vulcanized compound, not less than four (4) inches in length, shall be cut from the wire and marks placed on it two (2) inches apart;

The sample shall be stretched until the marks are six (6) inches apart, and then immediately released;

One minute after such release the marks shall be not more than two and three-eighths ($2\frac{3}{8}$) inches apart;

The sample shall then be stretched until the marks are ten (10) inches apart, before breaking.

AERIAL CABLES—Taped, braided, lead-covered or armored, for all services.

LEAD-ENCASED CABLES—We lead-encase any of the above insulations when requirements demand such special encasing.

UNDERGROUND CABLES—We manufacture special or regular finish for any type of cable.

SUBMARINE CABLES—Our factory is specially equipped and prepared to furnish submarine cables of any size or any length desired.

All Our Insulation Is Compounded on the Basis of Long Life and Service. Inquiries Are Solicited on this Basis.

"A.B.C." SYSTEMS

The American Conduit Manufacturing Co.

Manufacturers of

Steel and Non-Metallic Conduits for Electric Wires

PITTSBURGH, PA.

BOSTON

CHICAGO

DENVER

NEW YORK

SAN FRANCISCO

ST. LOUIS

PRODUCTS—"GALVANITE," "AMERICAN," AND "WIREDUCT" CONDUITS

GALVANITE—An Electro-Galvanized Rigid Steel Conduit with enameled interior is, to-day, the best conduit that first-class material and skilled workmanship can make. The coating is of pure metallic zinc applied electrolytically, and perfectly adherent on the steel.

The value of a zinc coating as a protection against corrosion is due to the fact that zinc is strongly electro-positive to steel. The purer the zinc the more electro-positive it must be to steel, and by the electrolytic process only pure zinc can be deposited. This coating cannot chip, peel, or be injured by abrasion, and withstands perfectly the rough usage and handling incident to shipment and installation.

GALVANITE forms a perfect bond in concrete work. It is rustless, non-corrosive and insures automatic grounding of the system in compliance with the Underwriters' Rules. Being a perfect conductor, an installation of this conduit requires only one ground connection.

The threads are free from enamel, rendering the starting of couplings a simple matter; re-threading is unnecessary and there is no enamel to interfere with the cutting of new threads.

The interior of the tube is coated with hard, smooth enamel, furnishing a perfect raceway for wires. The pickling and sand-blast method guarantees, as a foundation for this enamel, a smooth surface free from scales, fins, burrs, or other irregularities.

These characteristics of GALVANITE more than offset the difference in price (five per cent) between it and enameled conduit.

AMERICAN—An Enameled Rigid Steel Conduit. It is a heavy wall tube of "Spellerized" steel, with a tough, flexible and permanent enamel inside and out.

The difference between AMERICAN and GALVANITE Conduits is in their exterior coating; that of GALVANITE being electro-galvanized, as above described, and that of AMERICAN being of enamel.



TRADE MARK

WIREDUCT—A scientifically-constructed Non-Metallic Flexible Conduit, composed of three separate elements: The lining, which is of closely woven heavy canvas; the framework of spirally-wound resilient fiber; and the outer envelope of strong cotton braid treated with fireproofing and moisture-proofing compounds. These elements are cemented together into a perfect tube by means of the "patent binder," the exclusive WIREDUCT feature. It is this "patent binder"

which permits of WIREDUCT regaining its original cross section after it has been severely kinked or distorted. The layers do not separate.

QUALITY—The steel used in the manufacture of GALVANITE and AMERICAN conduits is produced by the "Spellerizing" process. "Spellerized" steel resists corrosion, and is so soft that the tubes formed of it may be bent cold on the job at a short radius without danger of breaking. The smoothness of their interior surfaces is obtained by pickling and sand blasting, proven by years of experience to be the only safe and efficient method of performing this work.

All of our conduits are examined, under the requirements of the National Board of Fire Underwriters, by the Underwriters' National Electric Association, after exhaustive tests by the Underwriters' Laboratories, and approved for use.

FACILITIES—We possess large modern factories, and branch offices in the largest cities. Complete stocks, including conduits and standard fittings, are carried at New York, Boston, Chicago, Denver, San Francisco and Pittsburgh. We specialize in difficult bends made to sketch.

DELIVERIES—Our products may be furnished in any quantity, without delay, from factory or from any one of our warehouse stocks, as well as from the stocks of electrical jobbers.

PRICES—Discounts from the accompanying price-lists will be quoted by our main office or by any of our branches, upon application.

SAMPLES of all our products and additional descriptive matter will be gladly sent on request.

PRICE LIST
GALVANITE AND AMERICAN

SIZE	Actual Outside Diameter Inches	Nominal Inside Diameter Inches	Nominal Weight per Foot, Pounds	CONDUIT Price per 100 Feet	ELBOWS		ELBOWS Price per 100	COUPLINGS Price per 100
					Radius	Offset		
1/4	.84	.62	.85	\$12.50	4 25	7 50	\$22.00	\$8.00
3/8	1.05	.82	1.12	16.00	5 37	9 25	27.00	11.00
1	1.31	1.04	1.67	21.00	5 75	10 12	45.00	13.00
1 1/4	1.66	1.38	2.24	30.00	7 25	11 50	70.00	17.00
1 1/2	1.90	1.61	2.58	34.00	8 50	12 62	115.00	21.00
2	2.37	2.06	3.61	47.00	9 50	15 25	200.00	35.00
2 1/2	2.87	2.46	5.74	75.00	10 50	17 75	310.00	40.00
3	3.50	3.06	7.54	107.00	13.00	19 37	900.00	60.00
3 1/2	4.00	3.54	9.00	141.00	15.00	21.00	2000.00	100.00
4	4.50	4.02	10.66	175.00	16.00	22 50	2795.00	140.00

Tubes in 10 foot lengths, threaded both ends, with coupling
Prices on Special Sizes and Lengths on Application

"A.B.C." SYSTEMS

REFERENCES—A Few of the Most Prominent Buildings and Constructions in which our Conduit has been installed follow herewith:

University Club, Pittsburgh, Pa.	Post Office, Sacramento, Cal.
Oakland City Hall, Oakland, Cal.	Millard Hall, Minneapolis, Minn.
The Roxborough, 12-story Apartment, New York, N. Y.	Armory Building, Pittsburgh, Pa.
El Dorado County Court House, Placerville, Cal.	National Theater, City of Mexico, Mex.
Providence Hospital, Seattle, Wash.	Alcazar Theater, San Francisco, Cal.
The Allerton, 10-story Apartment, New York, N. Y.	Frick Building Annex, Pittsburgh, Pa.
Harris Theater, Pittsburgh, Pa.	Union Depot, Columbus, Ohio
Federal Security Building, Sacramento, Cal.	Rockefeller Building, Cleveland, Ohio
New Central High School, St. Paul, Minn.	Jenkins Arcade Building, Pittsburgh, Pa.
Liberal Arts and Science Building, Iowa City, Iowa	International Harvester Company Building, Chicago, Ill.
Commonwealth Building, Pittsburgh, Pa.	Masonic Temple, San Francisco, Cal.
	Keenan Building, Pittsburgh, Pa.
	Olympic Club, San Francisco, Cal.
	Mellon Residence, Pittsburgh, Pa.
	Land Title Building, Philadelphia, Pa.
	Sunset Theater, San Francisco, Cal.
	St. Paul's Cathedral, Pittsburgh, Pa.

H. Krantz Manufacturing Co.

Manufacturers of

Switchboards, Switches, Panelboards, Outlet Boxes

160-166 SEVENTH STREET AND 117-123 EIGHTH STREET

BROOKLYN, N. Y.

579 Howard St.
SAN FRANCISCO, CAL.

249 Victoria St.
TORONTO, ONTARIO

221 South Clinton St.
CHICAGO, ILL.

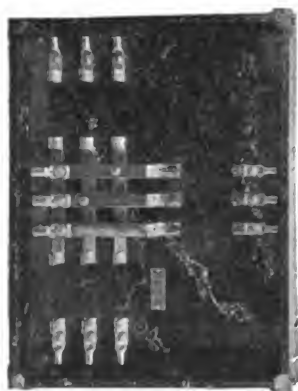
PRODUCTS—SWITCHBOARDS, SWITCHES, PANELBOARDS AND THEIR ACCESSORIES, OUTLET BOXES, ELECTRICAL SPECIALTIES, HARDWOOD AND STEEL PANELBOARD CABINETS

fications, or will submit drawings for approval. Inquiries for information will receive immediate attention, and estimates are promptly rendered.

DESCRIPTION—Operating the largest plant in the United States exclusively devoted to manufacturing the above products, we are able to make the promptest delivery in any quantity of either regular-line or specially constructed work. All goods leaving our factories bear the stamp "Krantz" and as such are fully guaranteed as to excellence of material and workmanship. Fifteen years of successful work and an enviable reputation are behind this guarantee.

PRICES—The Krantz Manufacturing Co. is enabled to offer its products at prices no higher than those current elsewhere for goods of lower grade.

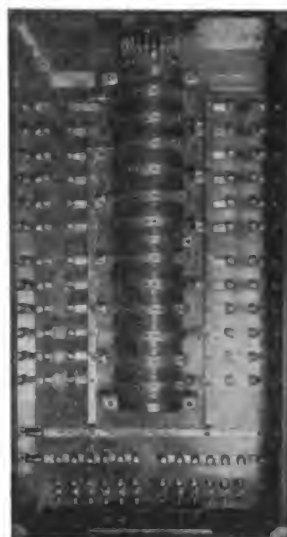
CO-OPERATION—Our practical and engineering experience are at the command of architects for the solution of problems in Switch- and Panel-Board construction. We execute special design in any desired material or finish from plans or speci-



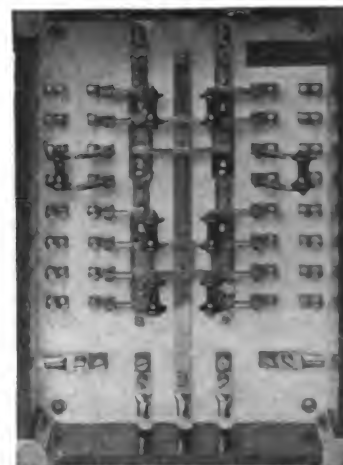
CENTER OF DISTRIBUTION



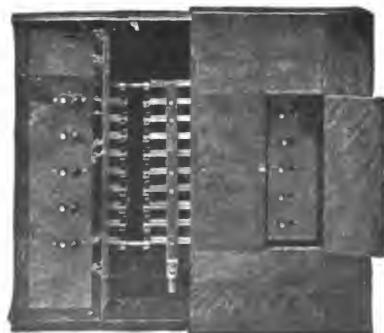
STANDARD HARDWOOD
PANELBOARD CABINET



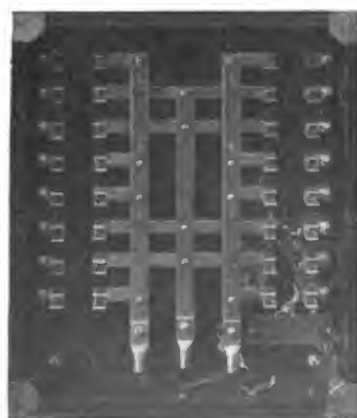
TYPE "MR" METERING
PANEL



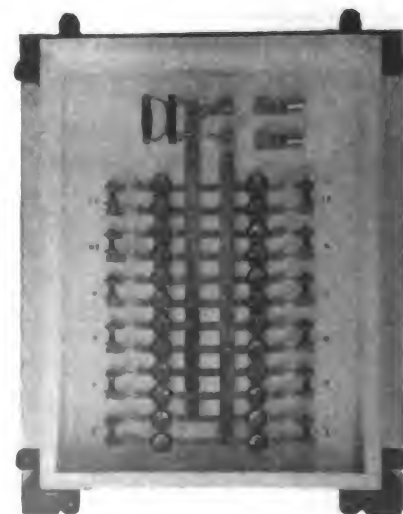
TYPE "B" STRAIGHT LINE PANEL



TYPE "M" PUSH-BUTTON PANEL



TYPE "A" PANEL



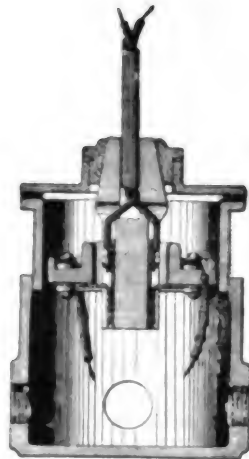
TYPE "O" FUSE PANEL

"A.B.C." SYSTEMS

Continued on next page



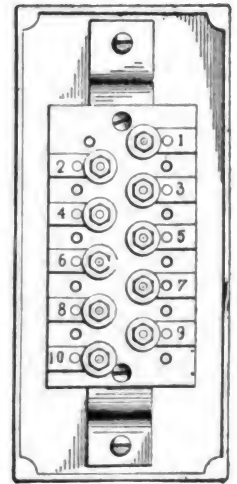
5,000-AMPERE 3-POLE SWITCH



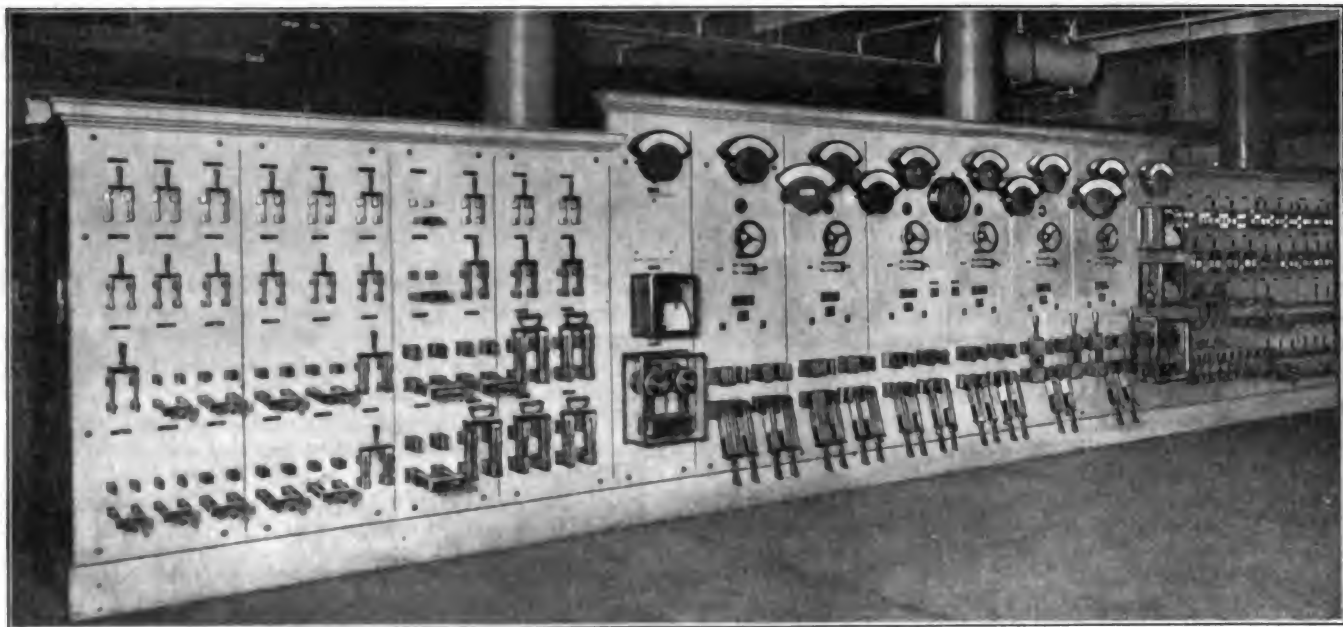
ADJUSTABLE FLOOR BOX



SET SCREW, SPLIT AND
THREADED BUSHINGS



TELEPHONE INTERCON-
NECTIONS



MAIN SWITCHBOARD IN ABRAHAM & STRAUS DEPARTMENT STORE, BROOKLYN, N. Y.

REFERENCES—The following is a partial list of prominent buildings in which Krantz Panelboards and other products are installed:

- | | | |
|---|--|--|
| Abraham & Straus, Brooklyn, N. Y. | New Trinity Building, New York, N. Y. | Briar Cliff Lodge, Briar Cliff Manor, N. Y. |
| Baltimore & Ohio Building, Baltimore, Md. | N. Y. C. & H. R. R. R. Power Stations, Port Morris and
Yonkers, N. Y. | Emerson Hotel, Baltimore, Md. |
| Bellevue-Stratford Hotel, Philadelphia, Pa. | New York Life Building, New York, N. Y. | East River Savings Institution, New York, N. Y. |
| Belmont Hotel, New York, N. Y. | New York Times Building, New York, N. Y. | Victoria Museum, Ottawa, Ont. |
| Belvidere Hotel, Baltimore, Md. | Onondaga County Court House, Syracuse, N. Y. | Underwood Building, New York, N. Y. |
| Boldt, Geo. T., Residence, Alexander Bay, N. Y. | Oriental Hotel, Manhattan Beach, N. Y. | Folies Bergere Theatre, New York, N. Y. |
| Carnegie Institute, Pittsburgh, Pa. | Palm Beach Hotel, Palm Beach, Fla. | Mercantile Building, New York, N. Y. |
| Clafin Building, New York, N. Y. | Pennsylvania Building, Philadelphia, Pa. | Hotel Pontiac, Oswego, N. Y. |
| Columbia University, New York, N. Y. | Philadelphia Building, Pittsburgh, Pa. | American Bank Note Co., Hunt's Point, N. Y. |
| Cornell University, Ithaca, N. Y. | Princeton Library Building, Princeton, N. J. | Huntington, C. P., Residence, New York, N. Y. |
| Engineering Building, New York, N. Y. | St. Regis Hotel, New York, N. Y. | Gair, Robt., Co., Brooklyn, N. Y. |
| Exchange Court Building, New York, N. Y. | Saks & Co., New York, N. Y. | U. S. Assay Office, New York, N. Y. |
| Field, Marshall, & Co., Chicago, Ill. | Schwab Residence, New York, N. Y. | 80 Maiden Lane Building, New York, N. Y. |
| Fordham Hospital, New York, N. Y. | Seaboard National Bank, New York, N. Y. | Oppenheim-Collins Co., New York, N. Y. |
| Frick Building, Pittsburgh, Pa. | Sherry Hotel, New York, N. Y. | Hebrew Sheltering Guardian Society, Pleasantville, N. Y. |
| Gould Residence, New York, N. Y. | Singer Building, New York, N. Y. | Eaton Residence and Stores, Toronto, Ont. |
| Hoe, R., & Co., New York, N. Y. | Temple Bar Building, Brooklyn, N. Y. | Empire Theatre, Syracuse, N. Y. |
| Hotel Astor, New York, N. Y. | Tiffany Building, New York, N. Y. | State Educational Building, Albany, N. Y. |
| Hotel Ormond, Palm Beach, Fla. | Union Club, New York, N. Y. | Union Theological Seminary, New York, N. Y. |
| Knickerbocker Hotel, New York, N. Y. | U. S. Custom House, New York, N. Y. | Canada Life Building, Vancouver, B. C. |
| Macy Building, New York, N. Y. | Vanderbilt, Cornelius, Residence, New York, N. Y. | DuPont Building, Wilmington, Del. |
| Madison Square Presbyterian Church, New York, N. Y. | Wanamaker, John, New York, N. Y. | Jelke, John F., Co., Chicago, Ill. |
| Mandel Building, Chicago, Ill. | White House, Washington, D. C. | American Can Co., Baltimore, Md. |
| Manhattan Hotel, New York, N. Y. | Avon Street Trust Building, Boston, Mass. | U. S. Appraisers Stores, New York, N. Y. |
| Martinique Hotel, New York, N. Y. | New Theatre, New York, N. Y. | Pratt Institute, Brooklyn, N. Y. |
| Metropolitan Life Building, New York, N. Y. | Hudson Terminal Building, New York, N. Y. | Hudson County Court House, Jersey City, N. J. |
| Mills Building, Washington, D. C. | Academy of Music, Brooklyn, N. Y. | Y. M. C. A. Building, San Francisco, Cal. |
| Morgan, J. P., Residence, New York, N. Y. | Masonic Temple, Brooklyn, N. Y. | Whitney Central National Bank, New Orleans, La. |
| Nassau Hotel, Bahama Islands, W. I. | Pennsylvania Depot, New York, N. Y. | Hall of Justice, San Francisco, Cal. |
| Netherlands Hotel, New York, N. Y. | | Windsor Station, C. P. R'way., Montreal, Quebec |
| New Plaza Hotel, New York, N. Y. | | |

"A.B.C." SYSTEMS

General Electric Company

Sales Offices

BOSTON, MASS., 84 State St.
NEW YORK, N. Y., 30 Church St.
SYRACUSE, N. Y., Post-Standard Bldg.
BUFFALO, N. Y., Ellicott Square Bldg.
NEW HAVEN, CONN., Malley Bldg.
PHILADELPHIA, PA., Witherspoon Bldg.
BALTIMORE, MD., Continental Trust Bldg.
CHARLOTTE, N. C., Trust Bldg.
CHARLESTON, W. VA., Charleston National Bank Bldg.
PITTSBURGH, PA., Park Bldg.
RICHMOND, VA., 712 Mutual Bldg.
ATLANTA, GA., Empire Bldg.
NEW ORLEANS, LA., Hennen Bldg.

SCHENECTADY, N. Y.

CINCINNATI, OHIO, Provident Savings Bank & Trust Bldg.
COLUMBUS, OHIO, Columbus Savings & Trust Bldg.
CLEVELAND, OHIO, Citizens Bldg.
NASHVILLE, TENN., Stahlman Bldg.
INDIANAPOLIS, IND., Traction Terminal Bldg.
CHICAGO, ILL., Monadnock Bldg.
DETROIT, MICH., Majestic Bldg. (Office of Soliciting Agent.)
ST. LOUIS, MO., Wainwright Bldg.
KANSAS CITY, MO., Dwight Bldg.
OKLAHOMA CITY, OKLA., Culbertson Bldg. (Office of Soliciting Agent.)

Sales Offices

DALLAS, TEXAS, Scollard Bldg. (Office of Soliciting Agent.)
BUTTE, MONT., Phoenix Bldg.
DULUTH, MINN., Providence Bldg.
MINNEAPOLIS, MINN., Phoenix Bldg.
DENVER, COLO., Kittredge Bldg.
SALT LAKE CITY, UTAH, Newhouse Bldg.
SAN FRANCISCO, CAL., Union Trust Bldg.
LOS ANGELES, CAL., Delta Bldg.
PORTLAND, ORE., Worcester Bldg.
SEATTLE, WASH., Colman Bldg.
SPOKANE, WASH., Paulsen Bldg.

Foreign Department: SCHENECTADY, N. Y., and 30 Church St., NEW YORK, N. Y.

London Office: 83 Cannon St., E. C., LONDON, ENG.

For All Canadian Business: CANADIAN GENERAL ELECTRIC COMPANY, LTD., TORONTO, ONT.

PRODUCTS—GENERATORS, Direct-connected or Belt Machines: ALTERNATING CURRENT, CONSTANT DIRECTION CURRENT, GASOLINE-ENGINE SETS, STEAM TURBINE SETS, DIRECT-CONNECTED VERTICAL STEAM SETS; STORAGE BATTERY LIGHTING SYSTEM ACCUMULATORS; TRANSFORMERS; CONTROLLERS; ROTARY CONVERTERS; RHEOSTATS

ARC LAMPS: A. C., D. C., ENCLOSED, FLAMING, MAGNETIC, MINIATURE, REGENERATIVE; WIRING APPLIANCES for Arc Lamps INCANDESCENT LAMPS: CARBON FILAMENT, MAZDA, TANTALUM, TUNGSTEN

SWITCHBOARDS AND SWITCHES, DISTRIBUTION PANELS AND CABINETS, REGULATING AND MEASURING INSTRUMENTS, LIGHTNING ARRESTERS, MERCURY ARC RECTIFIERS

WIRING DETAILS: COPPER WIRE AND CABLE; LAMP SOCKETS, RECEPTACLES, SWITCHES, CONTACT PLUGS, FLOOR BOXES, INSULATORS, ETC.

MOTORS: A. C. and D. C. MOTORS, STARTER RHEOSTATS, STATIONARY AND PORTABLE FANS

ELECTRIC ENGINEERING for Light and Power, SEARCHLIGHT EQUIPMENT

ILLUMINATION, Design and Fixtures: CONCEALED LIGHTING APPLIANCES, DIFFUSERS, REFLECTORS; SHOW WINDOW LIGHTING, THEATER STAGE LIGHTING, DIMMERS, SPECIAL DESIGN OUTLETS, ETC.

ELECTRIC HEATING, COOKING AND LAUNDERING DEVICES

PUBLICATION BUREAU—The General Electric Company maintains a Publicity Bureau at its headquarters at Schenectady, N. Y., through which or through any of our Domestic and Foreign Sales Offices may be obtained General Catalogs, Special Bulletins and Price Lists on any of our products.

DESCRIPTION—This catalog is devoted to Electric Wiring Equipment, embracing: Fuses, Panel Boards and Cabinets, Sockets and Receptacles, Snap Switches, etc., all described and illustrated hereafter.

We manufacture about 15,000 styles of Standard Panel Boards to meet every possible requirement. In scientific design, durable construction and attractive finish they conform with the most exacting specifications and approved electrical practice.

Our line of fuses is complete for every class of work. Our N. E. C. Standard Plug Fuses, Enclosed Fuses and Open-Link Fuses are shown in various applications in the panel board arrangements illustrated herewith.

The standard and special Lamp Sockets and Receptacles made by this company cover all possible requirements in electric installation.

The ratings of all our Snap Switches are standardized by the Underwriters' Laboratories. On a subsequent page particular attention is directed to our Flush Switch with removable mechanism and to our New G. E. Pendent Switch.

In this catalog we give illustrations of only the leading types

and styles of Wiring Devices, for which there is widest and most constant demand.

SPECIALTIES—We have, in addition, a complete line of devices of special design for special work. Information regarding any of these devices can be had from our Sales Offices. In writing for data state intended location of these special designs and the purposes for which they are required.

INSTALLATION ELEMENTS—A Panel Board is a center of distribution for lighting circuits, the object being to secure convenient observation and control of a number of such circuits at one point. The control may be by fuses only or fuses and switches. The N. E. C. allowance for a standard lighting circuit is 660 watts.

The mains supplying the Panel Board (two-wire or three-wire feeders) may be direct-attached to lugs or be fitted with fuses or with switches, or with both. The copper bars carrying the currents, busbars, are of a cross-section sufficient for a current density of 1000 amperes per square inch.

To provide for proper insulation, the metal parts are mounted on a base or panel of slate or marble, and the whole is enclosed in a box or cabinet which is additionally lined or protected for insulation. A slate or marble frame may be added to separate the panel from wiring space, or gutter. The boxes or cabinets may be wood or steel of various finishes, and either recessed in wall (flush) or surface type.

STANDARD PANEL BOARDS—General Electric Panel Boards are made of the very best materials only. They are compact, and possess a durable finish which gives to the panel an attractive appearance. Any finish preferred or called for in Architect's specifications can be supplied. However, No. 1, or plain black finished slate, with satin-finished busbars and branch connections is strongly recommended.

ARRANGEMENT—Panels are arranged for either G. E. plug fuses, N. E. Code standard enclosed fuses or for open-link fuses in the circuits, and with or without switches. The six panels illustrated on another page show the basic forms from which every kind of panel board can be constructed by applying any one of the three different types of branch fuses, and by the introduction of main fuses only or of fused or unfused main switches, and of outlet fuses on the through-feed panels.

The illustrations following the basic panels are confined to one panel of each type showing the use of different styles of fuses in the circuits and the attachment of knife switches to same, either inside or outside of the fuses. The variations in equipment of mains and through-feeders are omitted, as they can readily be seen in the six basic panels.

Panels are designed for single or double branches, and are, according to the supply and distribution wiring, either 2 to 2-wire or 3 to 2-wire or 3 to 3-wire designs. Voltages are 125 or 250, and are stated in each case. The letters designating forms, marked under each basic panel, are references to our general catalog.

DETAILS—MAINS—On forms L and F Panels, the main terminals, busbars, switches and enclosed fuses have a capacity of

6 amperes per circuit on 2 to 2-wire and 3 to 3-wire panels, and 3 amperes per circuit on 3 to 2-wire panels. On forms L-2, F-1, and F-2 (panels with through-mains), the main terminals, main switches, main fuses and busbars carry 50 per cent. capacity in excess of above rating.

SWITCHES—Each individual circuit switch has a capacity of 30 amperes. Their mechanical construction is of the strongest kind to insure rigid durability.

PANEL FRAME (OR BARRIER)—The frame surrounds the panel and is fastened together and to the back of the cabinet by corner irons. It separates the active part of the panel from the wiring. The frame has slots opposite each terminal through which the wires pass. The complete wiring of the panel can, therefore, be done before placing the frame in its proper position. This simplifies the work of connecting the circuits to the panel.

INFORMATION NECESSARY TO SPECIFY CABINET PANELS—DISTRIBUTION—Are the panel mains or feeders to be 2-wire or 3-wire? Will there be single branches or double branches? Are the branches to be 2-wire or 3-wire? Will meter loops or sub-feeds be required?

VOLTAGE—125, 250 or 440 volts A. C. or D. C.? If the current is A. C. specify its phase.

MAIN OR FEEDER ARRANGEMENTS—Are there to be terminals only in the mains? Will through-feed be required? Are the mains to be fused? Are they to have switches? Are they to have both fuses and switches? Of what capacity are the terminals, fuses or switches to be? Are the panels to be arranged for N. E. C. fuse plugs, N. E. C. enclosed fuses or for open-link fuses?

(NOTE—The use of through-feeds is not recommended for the reason that any considerable extension of a building or of the quantity of light required will, with through-feed, necessitate rearrangement of wiring and panel board details. When through-feed is insisted on we calculate the mains for 50 per cent. overload, unless greater capacity is specified.)

BRANCH CIRCUITS—How many? Are they to be fused alone or fused with switches? Are the fuses to be N. E. C. enclosed fuses, N. E. C. plug fuses or open-link fuses? Are the switches to be inside or outside of the fuses? What character of finish will be required on the metal parts?

BARRIER, FRAME, BASE—Are barriers (or frames) to be provided? If so, of what material? Are they to set on top of the panel base or to telescope the same? (General Electric Co. standard construction calls for barriers to set on top of base.) Are the barriers to be slotted or drilled for the branch and main wires? (General Electric Co. recommends slotting so that wiring can be done before barriers are put in place.) What material is to be used for base? If marble, of what description and thickness? If slate, of what finish—plain black, enameled, or marbleized—and thickness?

SPECIAL FEATURES—Is a removable key prong lamp receptacle to be furnished? This serves the double purpose of lighting the panel and gives a means of testing blown circuit fuses. Is a directory frame, indexing the circuits, required?

CABINETS—Is surface or flush type to be used? What material is to be used for box body, also for door and trim? Are the doors to be plain, or equipped with plain or plate glass? Are door linings required? In the case of wood doors and trim, are they to be standard pattern or specially designed to match surrounding woodwork?

EXTRA EQUIPMENT—Are fuses required? If so, how many sets?

SPECIAL WORK—We are prepared to bid on specifications calling for special boards that must be made to order. Cabinets likewise are furnished for any special requirements, made and lined as called for.

NOTE—The General Electric Company will be very glad to co-operate with any architect or engineer in planning or arranging a panel board installation.

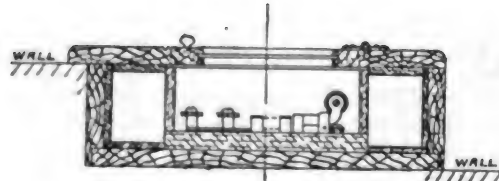
"A.B.C." SYSTEMS

Our engineers have a large experience from which to draw their conclusions and judgment and are prepared to give expert advice upon any matters referred to in the above.

WOOD CABINETS—Standard cabinets, asbestos, steel and slate lined, either flush or surface type, are furnished in natural wood finish with plain wood panel in door, unless otherwise specified. Sizes range from 15" to 26" in width and from 15" to 90" in length. These dimensions, in all cases, are 8" larger overall than the panel, i. e., 4" larger all around the four sides.

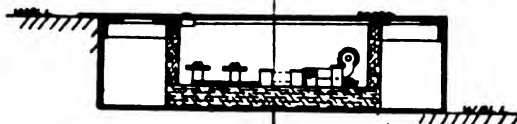
STEEL CABINETS—With Plain Steel Doors and Trim made of $\frac{1}{8}$ " steel plates strongly reinforced and electrically welded. Sizes range from 13" to 24" in width and from 13" to 88" in length. These dimensions are 6" larger inside than panel, i. e., 3" larger all around the four sides.

Steel Boxes, either flush or surface types, with wood doors and trim and with plain or beveled plate glass in door may also be had.



WOOD CABINET

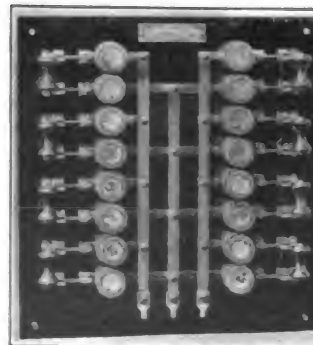
Can be made with plain or plate glass panel in door; cabinet can be lined with $\frac{1}{4}$ " slate, $\frac{3}{8}$ " asbestos or $1/16$ " steel.



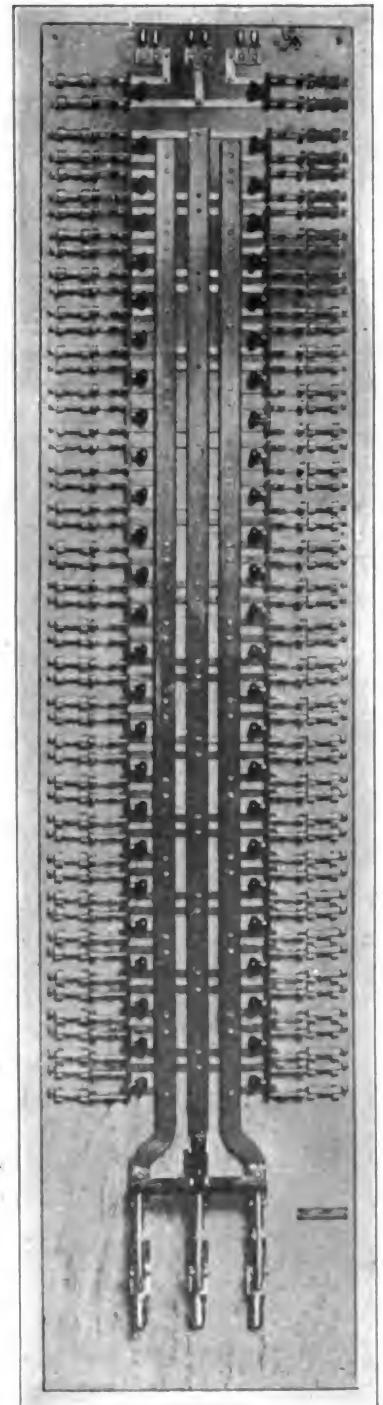
STEEL CABINET

Can be made with plain or plate glass panel in door. Welded or angle iron construction or with wood door and trim.

HALF PLANS OF WOOD AND STEEL CABINET, FLUSH TYPE AND SURFACE TYPE, $4\frac{1}{2}$ " TO $5\frac{1}{2}$ " DEEP, FOR STANDARD PANELS.



125-VOLT CABINET PANEL



PANEL FOR BANKERS TRUST BUILDING, NEW YORK; TROWBRIDGE & LIVINGSTON, ARCHITECTS.

This is an example of the special work we are prepared to do. This panel has marble base and barriers, 50 enclosed fused circuits with switches inside of fuses, and with main switch on the general lighting section and 2 separate circuits with double lugs on section for night lighting.

Continued on next page

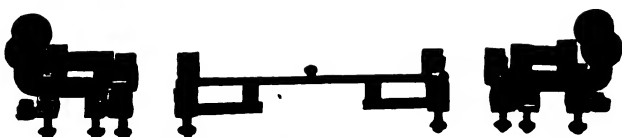


Switches Outside of Fuses



Switches Inside of Fuses

WITH N.E.C. PLUG FUSES

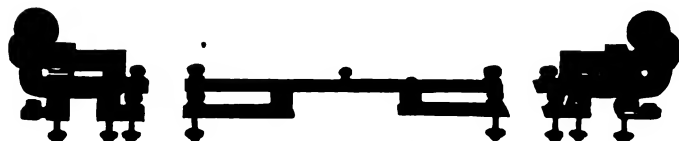


Switches Outside of Fuses

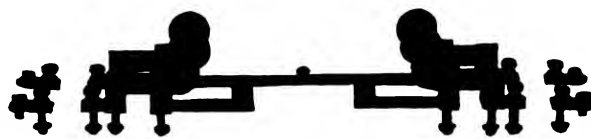


Switches Inside of Fuses

WITH N.E.C. ENCLOSED FUSES



Switches Outside of Fuses

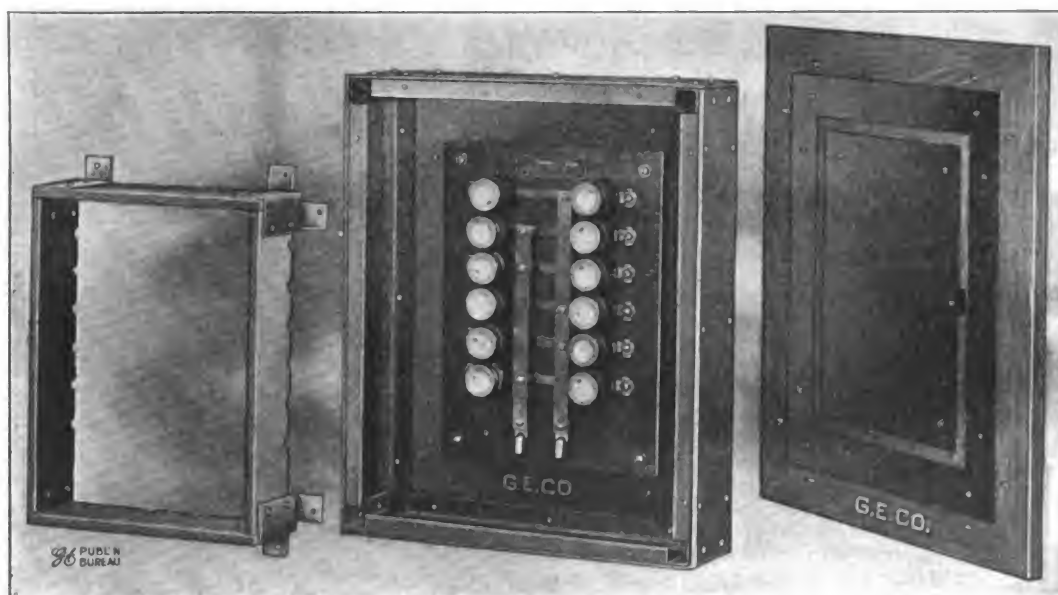


Switches Inside of Fuses

WITH OPEN LINK FUSES

STANDARD KNOCKDOWN PANEL CIRCUITS

The six cuts above illustrate in detail our standard 2-wire branch circuits arranged for different fusings and switch positions.



CABINET PANEL IN SHEET STEEL

ASSEMBLING VIEW OF STANDARD PANEL BOARD IN STEEL CABINET WITH WOOD DOOR AND TRIM UNDER THE FOLLOWING SPECIFICATIONS:

Two-wire main, 2-wire double branch of 6 circuits arranged for plug fuses only; mains have lugs; frame, as shown in cut on left, is slotted for branch wires. Base and barriers are of plain black slate, oil-finished. Door and trim are of standard construction and lined with slate.



N. E. C. Standard 250-Volt Enclosed Fuses for use with G. E. Cabinet Panels.

Capacities 1 to 30 amp.
Capacities 35 to 60 amp.

Capacities 65 to 100 amp.
Capacities 110 to 200 amp.
Capacities 225 to 400 amp.
Capacities 425 to 600 amp.



Standard G. E. Fuse Plugs for Use on 125-Volt Cabinet Panels.

Capacities 3 to 30 amperes.
G. E. Renewable Fuse Plugs.
Capacity 30 amperes, 250 volts.



Standard Fuses for Link Fuse Cabinet Panels, 125 and 250 volts.

For Branch Circuits

Capacities 10 to 30 amperes.

For Main Circuits

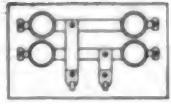
Capacities 10 to 60 amperes.
Capacities 70 to 100 amperes.
Capacities 125 to 400 amperes.

"A.E.C." SYSTEMS

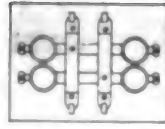
Continued on next page

SIX BASIC FORMS OF PANEL BOARDS

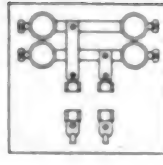
WITH N. E. C. STANDARD FUSE PLUGS, TWO-WIRE MAINS, DOUBLE BRANCHES, AND WITHOUT CIRCUIT SWITCHES, 125 AND 250 VOLTS.



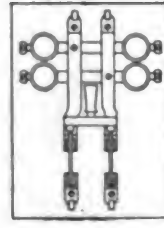
FORM L
ARRANGEMENT LUGS
FOR MAINS



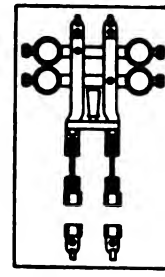
FORM L-2
ARRANGEMENT LUG
THROUGH-FEEDS



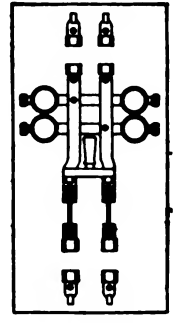
FORM F
FUSES FOR MAINS



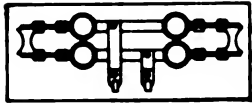
FORM L-2
FUSELESS SWITCH
FOR MAINS AND
THROUGH-FEED LUGS



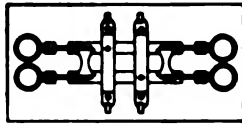
FORM F-L
FUSED SWITCH FOR
MAINS THROUGH-FEED



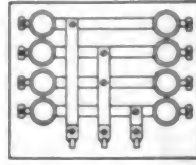
FORM F-2
FUSED MAIN SWITCH
AND FUSED
THROUGH-FEEDS



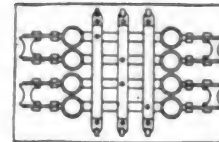
2-WIRE MAINS, 125 AND 250 VOLTS
Double Branches, with Circuit
Switches Outside of Plug Fuses



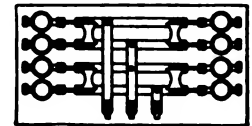
2-WIRE MAINS, 125 AND 250 VOLTS
Double Branches, with Circuit
Switches Inside of Plug Fuses



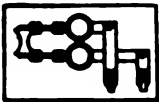
3-WIRE MAINS, 125 VOLTS
Double Branches, with Plug
Fuses Only



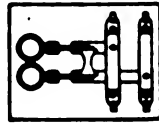
3-WIRE MAINS, 125 VOLTS
Double Branches, with Circuit
Switches Outside of Plug Fuses



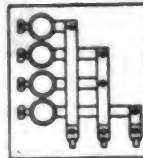
3-WIRE MAINS, 125 VOLTS
Double Branches, with Circuit
Switches Inside of Plug Fuses



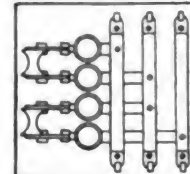
2-WIRE MAINS, 125 AND 250 VOLTS
Single Branch, with Circuit
Switches Outside of Fuses



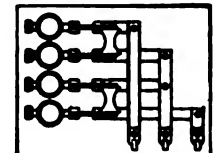
2-WIRE MAINS, 125 AND 250 VOLTS
Single Branch, with Circuit
Switches Inside of Fuses



3-WIRE MAINS, 125 VOLTS
Single Branch, with Plug Fuses
Only



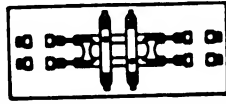
3-WIRE MAINS, 125 VOLTS
Double Branches, with Circuit
Switches Outside of Plug Fuses



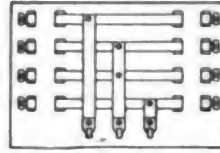
3-WIRE MAINS, 125 VOLTS
Double Branches, with Circuit
Switches Inside of Plug Fuses



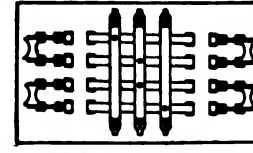
2-WIRE MAINS, 125 AND 250 VOLTS
Double Branches, with Circuit
Switches Outside of N. E. C. En-
closed Fuses



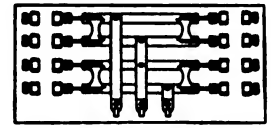
2-WIRE MAINS, 125 AND 250 VOLTS
Double Branches, with Circuit
Switches Inside of N. E. C. En-
closed Fuses



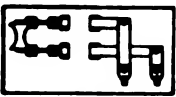
3-WIRE MAINS, 125 VOLTS
Double Branches, with N. E. C.
Enclosed Fuses Only



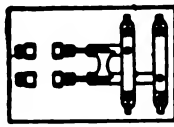
3-WIRE MAINS, 125 VOLTS
Double Branches, with Circuit
Switches Outside of N. E. C. En-
closed Fuses



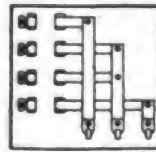
3-WIRE MAINS, 125 VOLTS
Double Branches, with Circuit
Switches Inside of N. E. C. En-
closed Fuses



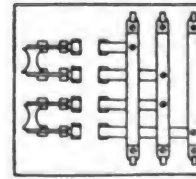
2-WIRE MAINS, 125 AND 250 VOLTS
Single Branch, with Circuit
Switches Outside of N. E. C. En-
closed Fuses



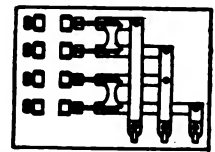
2-WIRE MAINS, 125 AND 250 VOLTS
Single Branch, with Circuit
Switches Inside of N. E. C. En-
closed Fuses



3-WIRE MAINS, 125 VOLTS
Single Branch, with N. E. C.
Enclosed Fuses Only



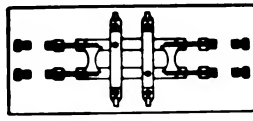
3-WIRE MAINS, 125 VOLTS
Single Branch, with Circuit
Switches Outside of N. E. C. En-
closed Fuses



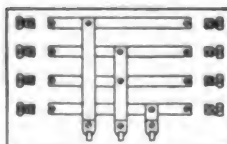
3-WIRE MAINS, 125 VOLTS
Single Branch, with Circuit
Switches Inside of N. E. C. En-
closed Fuses



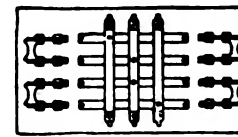
2-WIRE MAINS, 125 AND 250 VOLTS
Double Branches, with Circuit
Switches Outside of Open-Link
Fuses



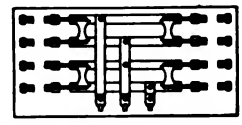
2-WIRE MAINS, 125 AND 250 VOLTS
Double Branches, with Circuit
Switches Inside of Open-Link
Fuses



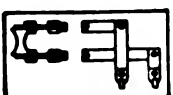
3-WIRE MAINS, 125 VOLTS
Double Branches, with Open-
Link Fuses Only



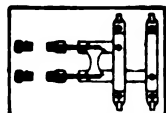
3-WIRE MAINS, 125 VOLTS
Double Branches, with Circuit
Switches Outside of Open-Link
Fuses



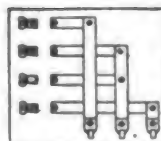
3-WIRE MAINS, 125 VOLTS
Double Branches, with Circuit
Switches Inside of Open-Link
Fuses



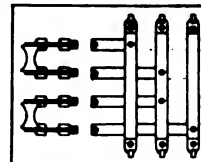
2-WIRE MAINS, 125 AND 250 VOLTS
Single Branch, with Circuit
Switches Outside of Open-Link
Fuses



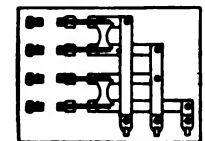
2-WIRE MAINS, 125 AND 250 VOLTS
Single Branch, with Circuit
Switches Inside of Open-Link
Fuses



3-WIRE MAINS, 125 VOLTS
Single Branch, with Open-Link
Fuses Only



3-WIRE MAINS, 125 VOLTS
Single Branch, with Circuit
Switches Outside of Open-Link
Fuses



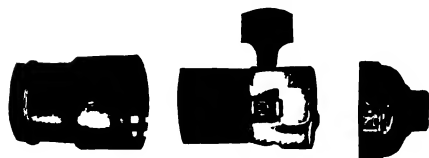
3-WIRE MAINS, 125 VOLTS
Single Branch, with Circuit
Switches Inside of Open-Link
Fuses

"A.B.C." SYSTEMS

Continued on next page

SOCKETS AND RECEPTACLES

MULTI-CATCH SOCKETS



Cat. No. 59952
MULTI-CATCH SOCKET
Especially desirable for Fixture Work. Adjusts Easily



Cat. No. 68009
MULTI-CATCH PULL SOCKET



Cat. No. 58951
MULTI-CATCH LOCKING SOCKET



Cat. No. 59954
MULTI-CATCH KEYLESS SOCKET

SPECIAL SOCKETS



Cat. No. GE139
KEYLESS FOR MUGUL BASE LAMPS



Cat. No. 50702
KEYLESS FOR '500 VOLT CIRCUITS
Threaded Connection
Brass Shell



Cat. No. GE596
KEY SOCKET WITH METAL TOP
Cap Removable from Front

PORCELAIN SOCKETS



Cat. No. GE056
KEYLESS, FULL METAL COVER
2 1/4" Concealed Base



Cat. No. GE045
KEY, ANGLE PORCELAIN BASE



Cat. No. GE043
KEY, PORCELAIN BASE



Cat. No. GE051
KEY, FULL METAL COVER
3 9/16" Concealed Base



Cat. No. GE055
KEYLESS, FULL METAL COVER
Porcelain Flange



Cat. No. GE005
KEY LOCKING RECEPTACLE
Porcelain Base



Cat. No. 88961
PULL RECEPTACLE
Porcelain Base

METAL SHELL RECEPTACLES



Cat. No. 88959
KEY RECEPTACLE
Porcelain Flange



Cat. No. 60020
KEYLESS RECEPTACLE
Large Concealed Base



Cat. No. GE266
KEYLESS RECEPTACLE
For Use on Standard Molding



Cat. No. 24998
KEYLESS RECEPTACLE WITH STUDS FOR BACK CONNECTIONS
For Switchboard Use

PORCELAIN RECEPTACLES FOR CLEAT WORK



Cat. No. 59275
KEYLESS FOR SUPPORTING WIRES 1" FROM SURFACE



Cat. No. GE033
KEYLESS FOR WEATHERPROOF SHADEHOLDER



Cat. No. 9403
KEYLESS ADAPTED FOR SHADEHOLDER



Cat. No. 61039
KEYLESS WITH PROTECTED CONTACTS



Cat. No. GE027
KEYLESS RECEPTACLE WITH SUB-BASE FOR GUY WIRE CONSTRUCTION



Cat. Nos. 50715 and 11221
KEYLESS HOLES FOR SUPPORTING SCREWS OUTSIDE

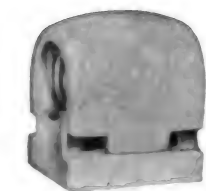


Cat. No. 28794
KEYLESS Protected base

SOCKETS AND RECEPTACLES

PORCELAIN RECEPTACLES FOR CONCEALED WORK

SEPARABLE ATTACHING PLUGS AND RECEPTACLES



Cat. No. 66722
KEYLESS MULTIPLE
RECEPTACLE
For Cleat, Molding or
Concealed Wiring



Cat. No. 9514
KEYLESS FLUSH
POCKET RECEPTACLE



Cat. No. GE600
KEY PORCELAIN
RECEPTACLE
Base Removable from
Front



Cat. No. 59805
COMBINED
SOCKET AND
SEPARABLE
ATTACHING
PLUG
Porcelain Medium Screw
Base, Fuseless, for
Multiple Work



Cat. No. 59071
CORD
CONNECTOR
DOUBLE-POLE,
Molded Material



Cat. No. 58729
ATTACHING
PLUG
Medium Screw Base
Fuseless, separable
cover



Cat. No. GE700
CONDUIT
BOX
RECEPTACLE
Porcelain



Cat. No. 58303
KEYLESS, WITH CON-
CEALED CONTACTS

PORCELAIN RECEPTACLES FOR MOLDING WORK



Cat. No. GE021
KEYLESS, WITH
SHADEHOLDER
GROOVE



Cat. No. 49489
CONCEALED
RECEPTACLE
Porcelain



Cat. No. 49488
CLEAT
RECEPTACLE
Porcelain



Cat. Nos. 49487
PORCELAIN
PLUG



No. GE064
MOLDING
RECEPTACLE
Porcelain



Cat. No. 62357
KEYLESS FLANGE
FORMS COVER OF
BOX



Cat. No. 49354
KEYLESS CONDUIT
BOX
For Attaching to Back of
Box Cover



Cat. No. 60931
KEYLESS CONDUIT BOX
For Attaching to Cover of Box

CEILING ROSETTES



Cat. No. 39234
For Cleat Work



Cat. No. 39236
DOUBLE-POLE FOR LINK FUSES
For Concealed Work



Cat. No. 39238
For Molding Work



Cat. Nos. 60124 and
40496
DOUBLE-POLE FOR LINK FUSES
For Concealed Work



Cat. Nos. 60123 and
32578
DOUBLE-POLE FOR LINK FUSES
For Cleat Work



Cat. No. 34356
FUSELESS
For Molding Work

WEATHERPROOF SOCKETS



Cat. No. 60666
MOLDED MATERIAL



Cat. No. 9448
PORCELAIN
BRACKET SOCKET



Cat. No. 43310
MOLDED MICA PEND-
ENT SOCKET FOR
SHADEHOLDER

ATTACHING PLUGS



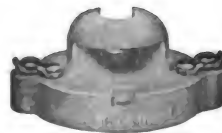
Cat. No. GE062
MINIATURE SEPARA-
BLE PLUG



Cat. No. 34153
METAL COVER
Medium Screw Base



Cat. No. GE002
MINIATURE SWIVEL
PLUG
Medium Screw Base



Cat. No. 43111
ONE PIECE, FUSE-
LESS
Cleat or Concealed Work



Cat. Nos. 60396 and
40496
DOUBLE-POLE FOR
LINK FUSES
For Molding Work



Cat. No. GE429
ROSETTE, WITH SUB-
BASE

25-AMPERE RECEPTACLES AND PLUGS



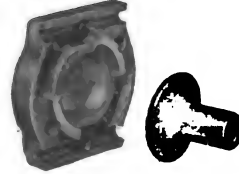
Cat. No. 45490
TRIPLE POLE, WITH
PORCELAIN PLUG



Cat. No. 45395
DOUBLE POLE, WITH
PORCELAIN PLUG



Cat. No. 66678
FUSELESS FOR USE WITH MAZDA LAMPS
Cleat type, with felt cushion shock absorber

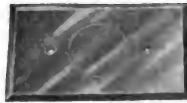


SOCKETS AND RECEPTACLES

FLUSH WALL RECEPTACLES



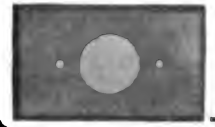
Cat. No. 36817
FOR MEDIUM SCREW
BASE PLUGS



Cat. No. 36818
PLATE
For Cat. No. 36817



Cat. No. 49490
FLUSH RECEPTACLE



Cat. No. 49491
FLUSH PLATE



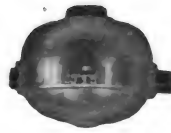
REMOVABLE
DOUBLE-POLE
FLUSH POCKET
RECEPTACLE



Cat. No. GE086
DOUBLE-DOOR
FLUSH RECEPTACLE
Complete with Plate and
Plug

A GROUP OF VARIOUS SNAP SWITCHES

G. E. PENDENT SWITCH—The most effective of pendent switches. The interior mechanism is the same as that of our standard snap switches. A bayonet joint with snaplock holds the two shells together. The switch body is secured to the lower shell. A fiber cover over the mechanism allows ample room for a knot in the cord, and there is no possibility of interference with the moving parts. The pendent switch also is furnished with tapped nozzles for fixture work.



Cat. No. GE564
SIDE PUSH BUTTON
SWITCH



Cat. No. 28841
KEY SWITCH



Cat. No. 61909
PORCELAIN CLEAT
SWITCH
Single Pole

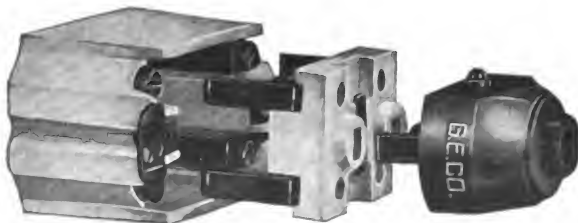


Cat. No. 88985
PORCELAIN MOLDING
SWITCH
Single Pole



Cat. No. 68141
CLOSED BASE FULL
METAL COVER.

G. E. REMOVABLE MECHANISM SWITCH—Constructed especially to comply with the restriction of the Fire Underwriters in regard to having loose wires in buildings during erection. With this type of switch only the porcelain box, with a temporary fiber cover, is installed with the wiring during plastering and other rough building operations. The removable mechanism, separately packed, is retained ready for insertion as soon as there is no



Cat. No. GE239
INDICATING PONY
TYPE
Slotted Base



SNAP SWITCH
With Extra Deep Base



SNAP SWITCH
With Porcelain Base,
Cover and Handle,
Single Pole



Cat. No. GE248
CEILING SWITCH



Cat. No. 60473
FLUSH ROTARY
SWITCH



Cat. No. 61044
FLUSH PLATE

REMOVABLE MECHANISM FLUSH PUSH BUTTON SWITCH



BOX ONLY



MECHANISM ONLY



LOCKING-TYPE
Mechanism Only

longer any danger of injury happening to it. The switch is thoroughly reliable, quick and smooth-operating, embodying simplicity of mechanism with accuracy of workmanship.

It is made, also, to lock with an *unusual* key, affording protection against tampering, as it will not yield to pins, wire or any pointed instrument. Removable mechanism Flush Receptacles may be used interchangeably with switch mechanisms in double-pole switch boxes.

"A.B.C." SYSTEMS

Safety-Armorite Conduit Co.

Manufacturers of
Interior Conduits and Steel-Armored Conductors
PITTSBURGH, PA.

Sales Representatives

NEW YORK: Thomas & Betts Co., 299 Broadway
BOSTON: S. B. Condit, Jr. & Co., 76 Batterymarch Street
CHICAGO: M. B. Austin & Co., 700 Jackson Boulevard

DENVER: The B. K. Sweeney Elec'l Co., 231 Fifteenth Street
SEATTLE: W. Montelius Price Co., 530 First Avenue S.
SAN FRANCISCO: Electric Appliance Co., 726 Mission Street

PRODUCTS—Interior Conduits—Rigid: "GALVADUCT" (Galvanized), "LORICATED" (Enameled), "S. A. C. CO. SPECIAL" (Galvanized with secondary Coating over Zinc)

Flexible: "STERLING"; "STERLING" STEEL-ARMORED CONDUCTOR

"STERLING" CONDUIT—Constructed of steel strip, well galvanized and wound into tubular form, each convolution securely locked on the one adjacent. Designed for use in wiring old structures and for those installations where maximum flexibility is required. This conduit is similar to the armor on "Sterling" Conductor.



"GALVADUCT" CONDUIT—This is manufactured from Spellerized Steel Pipe, the tubing being thoroughly cleaned of silicate, burrs and scale and then zinc or galvanized by the electrolytic process which ensures a coating of pure zinc, uniformly dense and thick. The interior is then coated with a smooth glass-like covering of flexible enamel. Made in ten-foot length, threaded and with coupling. It is thoroughly proof against corrosion under all ordinary service conditions.



"LORICATED" CONDUIT—This differs from Galvaduct only in as much as the external coating is concerned; the zinc is replaced by a well adherent flexible coating of high grade enamel.

"STERLING" STEEL-ARMORED FLEXIBLE CONDUCTOR—This is the best grade of new 1911-code wire protected from mechanical injury by a sheathing of galvanized steel so flexible in work that bends of small radius may be made without destroying its structure. Used for new and old work, mill and factory construction, machine and bench wiring, theater wiring, shop window and show case illumination, lamp pendants and in those cases of exposed wiring where neat appearance and good mechanical and electrical work are necessary.



SPECIFYING—When specifying our products, care should be taken that both the trade-brand name and the name of the maker be used in order that substitution may not be possible. While these materials are all manufactured under patents exclusively by the above makers, substitution has been frequently met with. This firm being the oldest and largest interior conduit makers, naturally its goods are freely imitated.

Our various products are regularly carried in stock by all leading jobbers throughout the country as well as by the Sales Representatives listed at the top of this page.

CONDUIT DEVELOPMENT

The Conduits listed on this page are the products of the largest and oldest conduit manufacturer in the country, one whose shop practice of many years gives them the ability to produce the best in Interior Conduits.

Conduit development has been rapid. Only a few years past very inferior and inefficient types of tube were in general use. The best construction but 15 years back was a tube of paper wall. As this lacked in mechanical strength, it was rapidly replaced by more efficient products. The successive steps of development followed in about this order: Paper with brass sheathing; paper, wood or composition fabrics, with light steel sheathing; the light steel replaced by a tube of gas-pipe thickness of wall; a light pipe wall, the tube unlined, protected from corrosion by

japan; a heavy wall pipe tube, coated with a composition of varying merits; lastly, the mechanically and electrically perfect structure now quite generally used for high-class work—GALVADUCT.

The general use of GALVADUCT is shown by a pictorial poster illustrating the largest installations in the world of various types of structure. Its merits are discussed by one of the greatest authorities on the Corrosion and Preservation of Iron and Steel, Dr. Allerton S. Cushman, of the Institute of Industrial Research, Washington, D. C., whose report is published in bulletin form. Copies of both poster and bulletin, and samples of any of the above materials, are furnished by mail, upon request by applying to SAFETY-ARMORITE CONDUIT CO., Pittsburgh, Pa.

"A.E.C." SYSTEMS

Steel City Electric Co.

PITTSBURGH, PA.



Sales Representatives

NEW YORK
Campbell-Stagg Co.
27 Thames St.

BUFFALO
G. E. Bennett & Co.
Mutual Life Bldg.

CHICAGO
The I. A. Bennett Co.
565-571 Van Buren St.

CLEVELAND
The Walter P. Ambos Co.
1729 E. Twelfth St.

SAN FRANCISCO
Aylsworth Agencies Co.
143 Second St.

BIRMINGHAM, ALA.
L. M. Robertson
Empire Bldg.

PRODUCTS—DRAWN-STEEL OUTLET BOXES; BUSHINGS AND LOCKNUTS; FULLMAN FLOOR OUTLETS; FLEXBOX OUTLETS; FIXTURE STEMS; UNIVERSAL INSULATOR SUPPORTS; BEAM STRAPS; CONDUIT TOOLS, and other Electrical Specialties

DESCRIPTION—"Steel City" Outlet Boxes and Covers embody the only practical advances in this line during the past 15 years. Some of these improvements are as follows:

KNOCK-OUT PLUGS—They are clean-cut "Nimble Knock-outs." Easy to come out when wanted. There is space all around, leaving only connecting neck. They hold secure until wanted out. They cannot jolt out from rough handling. The clean-cut opening with space all around the plug is to insure the absolute separation of the plug from the box except at the narrow uncut connecting neck. All boxes have usual sizes of knock-outs.

EARS—We make flanged ears for fastening covers. Securely riveted. They will not break off or pull out. Being of an improved shape, it is easy to start screws.

COVER ADJUSTMENT—Curved slots for cover screws, giving perfect adjustment. **There is no need to remove screws.**

FINISH—All boxes and covers furnished in sherardized or enameled finish, also covers in polished brass, according to lists mailed on request. The superiority of the sherardizing process—the new method of galvanizing or rustproofing—is now generally recognized.

SPECIAL FEATURES—Most other makes of covers fit our boxes; if not, we punch them to fit, and also *our covers* to fit any other boxes—to order—**without charge.**

Attention is invited to our new boxes for rigid and non-metallic flexible conduit combined, for jobs where both kinds of conduits are used.

FULLMAN ADJUSTABLE WATERTIGHT FLOOR OUTLETS—As specialists in the manufacture of Floor Outlets, we succeed in meeting every difficulty which may be experienced in this line. We are the pioneers in this work. We have a trained staff of experts and a modern plant, points which give us an advantage towards the purchaser.

Fullman Floor Outlets have, thus, rapidly grown in adaptability and scope. Various styles with detail explanations are shown in our catalogs, which will be mailed upon request. All our Outlets are kept continually in stock, and immediate delivery is our usual practice. In the event that the purchaser's problem is not entirely provided for by our stock designs, we shall be pleased to make the necessary modifications in them.

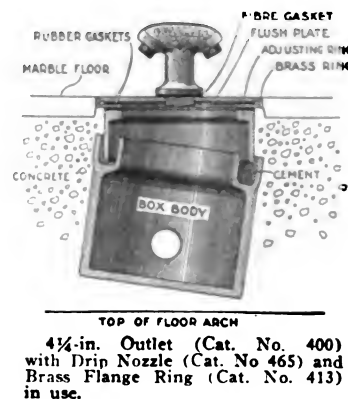
There are no conditions of construction work that Fullman Floor Outlets have failed to fulfill. The illustrations on the following page show one of our standard 4¼-inch Floor Outlets, while the sectional view herewith shows a 4¼-inch Outlet, with leveling adjustment.

Fullman Adjustable Floor Outlets are **watertight** and **automatically adjustable** for leveling and height.

WATERTIGHT — Careful study of condensation in conduits proves that Floor Outlet must be **absolutely watertight.** If not so, a current of moist, warm air rises from the Floor Outlet to some higher open point in the conduit system; then, coming in contact with the comparatively cool conduit, this moisture is condensed.

This condensation is continuous and drains from the conduit into the Outlet Box. By using **watertight gasketed Floor Outlets** these moist, warm air currents are prevented and, hence, no condensation can take place.

LEVELING ADJUSTMENT—A natural and frequent condition incident to a Floor Outlet Installation is to have the Box Body out of level with the finished floor. The Box Body, being set with "roughing-in" work, is subject to interference by workmen in a building, causing the boxes to be more or less out of



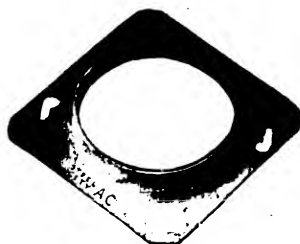
C 1½ BOX



B 1½ BOX RD COVER



AX 1½ BOX AND AE ¾ COVER



AC COVER

"A.B.C." SYSTEMS

Continued on next page

level when the finished floor is laid. Reference to sectional cut shows how this condition is taken care of by Fullman Outlets. No matter how much the Box Body may be out of level, the Cover always aligns automatically with the finished floor. The adjusting ring simply dips into the groove



SECTION, 4 3/4-INCH OUTLET (CAT. NO. 421) WITH BELL NOZZLE (CAT. NO. 406)



ASSEMBLY VIEW OF 4 3/4-IN. OUTLET COMPLETE (CAT. NO. 421) WITH BELL NOZZLE (CAT. NO. 406). A STANDARD FLUSH PLUG AND RECEPTACLE IS SHOWN ATTACHED TO IRON ADJUSTING RING

herewith), in the groove of the Box Body. Stock Adjusting Rings provide for a maximum vertical adjustment of 2 1/2 inches.

All our gang switch boxes and covers are made of drawn steel, eliminating loss by breakage. The advantage of having two sizes of cov-



4 3/4-INCH OUTLET COMPLETE (CAT. NO. 421) WITH BELL NOZZLE (CAT. NO. 406)

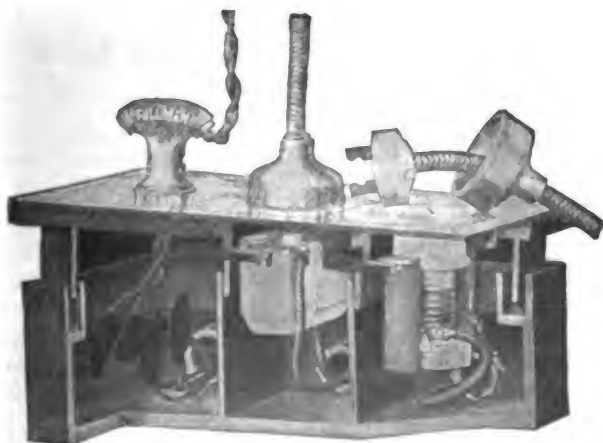
more on one side than on the other. Other forms require a great deal of time and trouble in fitting extra gaskets to block up the Cover Plate, or for setting adjusting screws to raise or lower the Cover until it comes even with the floor. This automatic adjustment of Fullman Outlets is an important labor-saving feature.

VERTICAL ADJUSTMENT—Fullman Floor Outlets also provide for vertical adjustment of cover where floor level alterations make it necessary to raise or lower the Cover after the

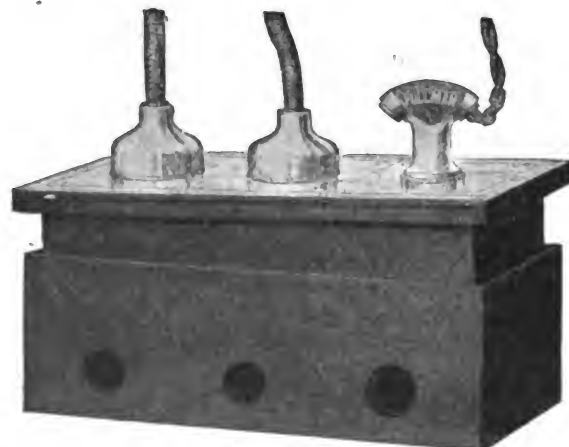
ers with each size of gang box will be much appreciated. For instance, a five-gang box will take either a five-gang or a six-gang cover.

When the Adjusting Ring is properly set, it is sealed to the Box Body by means of a cement contained in the groove of the Box Body. The cement, being an electrical conductor, not only

unites the two parts mechanically, but also electrically. This method of adjustment and uniting the two parts insures even distribution of stresses on the Cover Plate and avoids ad-



SECTIONAL VIEW OF THREE-GANG OUTLET SHOWING DRIP AND BELL NOZZLES IN USE AND 2-IN. FLUSH PLUG IN ONE COVER



EXTERNAL VIEW OF THREE-GANG OUTLET SHOWING DRIP AND BELL NOZZLES IN USE

Box Body has been set or installed. This is accomplished automatically by the raising or lowering of the Adjusting Ring, to which receptacle is attached (as shown in assembling view

justing-screw troubles, such as stripped threads and collars, or buckling of screws, liable to occur when a desk or any other heavy object is allowed to rest on the Cover Plate.

GANG OUTLETS—Rectangular Gang Outlets are furnished for supplying a variety of service, such as electric lights, fans, telephones, etc., from one point. They are a great improvement in appearance over several single outlets grouped near a desk or table. Furnished in two to six sections with covers for $\frac{1}{2}$ -in. or 2-in. flush plugs for drip or bell nozzles as desired. A brass-edge frame extends around the covers of Gang Outlets and accomplishes the same result as the brass flange ring on the round outlets. All Gang Outlets measure $5\frac{1}{2}$ inches wide. Two Gang is 7 inches long. Each additional section adds 3 inches to length. Six Gang Outlets are 19 inches long. Minimum height of all Gang Outlets is 4 inches.

Each section of the adjusting frames of Gang Outlets is provided with lugs for receptacles or receptacle strap (Cat. No. 475).

ADJUSTING RINGS—The standard over-all lengths of Iron Adjusting Rings for $4\frac{3}{4}$ -inch and $4\frac{1}{4}$ -inch Outlets are $1\frac{1}{4}$ inches, $1\frac{7}{8}$ inches, $2\frac{1}{2}$ inches and $3\frac{1}{8}$ inches. The $1\frac{1}{4}$ -inch ring is always sent in both cases unless otherwise specified.

Receptacles can be used in all Fullman Floor Outlets, but can only be used with ring shown in Catalog No. 405 (for $4\frac{1}{4}$ -inch Box), by using Receptacle Strap Catalog No. 475.

All these Adjusting Rings will give a range of vertical adjustment of about $2\frac{1}{2}$ inches, depending slightly on the angle at which the Box Body happens to be set in the floor.

All rings of same diameter are interchangeable and may be exchanged without extra charge.

The setting and adjustment of Fullman Outlets is extremely simple, but the accompanying cut may illustrate the details. In setting Iron Adjustment Rings in marble floors a piece of board is used for the same purpose as the Template shown in phantom view (Catalog Nos. 412 and 439).

The cement sent with each Outlet is filled into the groove in the Box Body. The Iron



(Catalog No. 431)
IRON ADJUSTING RINGS FOR
 $4\frac{3}{4}$ -INCH OUTLETS



(Catalog No. 405)
IRON ADJUSTING RINGS FOR
 $4\frac{1}{4}$ -INCH OUTLETS



(Catalog No. 413)
 $4\frac{3}{4}$ -INCH BRASS FLANGE RING

(Catalog No. 440)
 $4\frac{3}{4}$ -INCH BRASS FLANGE RING



PHANTOM VIEW SHOWING
METHOD OF USING TEM-
PLATE (CAT. NOS. 412 AND
439) FOR SETTING IRON
ADJUSTING RINGS IN WOOD-
EN FLOORS



(Catalog No. 466)
BELL NOZZLE



(Catalog No. 465)
DRIP NOZZLE



(Catalog No. 467)
FOUR-WAY NOZZLE

Adjusting Ring is pressed down into the groove until the arms of Template or ends of board rest on the floor. When cement has hardened the Template or board (as the case may be) is removed and the Rubber Gasket and Cover Plate are fastened to the Adjusting Ring.

These Brass Flange Rings are used in marble, mosaic, cement, granolithic or rubber-tile floors to prevent chipping of flooring upon repeated removal of Cover Plate. They are furnished for use with $4\frac{1}{4}$ -inch, $4\frac{3}{4}$ -inch, and $7\frac{1}{2}$ -inch Outlets only. The $7\frac{1}{2}$ -inch Outlets take the $4\frac{3}{4}$ -inch Brass Flange Rings. Extra Rubber Gaskets are required for Brass Flange Rings.



(Catalog No. 422)
STANDARD $4\frac{3}{4}$ -INCH BOX BODY

BOX BODIES—STANDARD—We make Standard Box Bodies as follows:

Standard $4\frac{3}{4}$ -inch (Cat. No. 422). Minimum height of Outlet to top of Cover Plate, $3\frac{5}{8}$ inches. Net opening in top, $3\frac{1}{2}$ inches. For conduits up to 1 inch with Bushing, or up to $1\frac{1}{4}$ inches without Bushing.

Standard $4\frac{1}{4}$ -inch (Cat. No. 402). Minimum height of Outlet to top of Cover Plate, $3\frac{5}{8}$ inches. Net opening in top, 3 inches. For conduits up to 1 inch with Bushing, or up to $1\frac{1}{4}$ inches without Bushing.

SPECIAL—We also manufacture a Special Shallow $4\frac{1}{4}$ -inch Box Body (Cat. No. 403). Minimum height of Outlet to top of Cover Plate, $3\frac{1}{8}$ inches. Net opening in top, 3 inches. For conduits up to $\frac{3}{4}$ inch with Bushing, or up to 1 inch without Bushing.

We make also a $4\frac{3}{4}$ -inch Box Body with special adjusting ring (all features otherwise standard $4\frac{3}{4}$ -inch), giving minimum height of $2\frac{1}{2}$ inches.

Note—All brass parts are polished and all iron or steel parts are Sherardized to prevent rust.

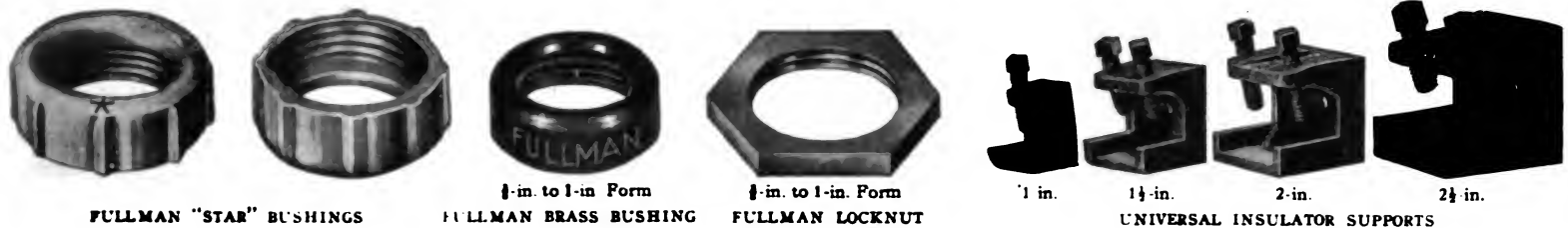
NOZZLES—Bell Nozzles are for use on Covers with 2-inch Plugs where a porcelain plug and receptacle is required. Can be used on $4\frac{1}{4}$ -inch Outlet by using Cover Plate with 2-inch Plug (Cat. No. 410).

Drip Nozzles are used on Covers with $\frac{1}{2}$ -inch Plugs where porcelain plug and receptacle is unnecessary. Can be used on $4\frac{3}{4}$ -inch Outlet by using Cover Plate with $\frac{1}{2}$ -inch Plug. (Cat. No. 435).

Four-Way Nozzles are for use with $7\frac{1}{2}$ -inch Outlet only when provided with four partitions.

A $4\frac{3}{4}$ -inch Cover Plate is used for $7\frac{1}{2}$ -inch Outlet.

Note—All Covers and Nozzles are made of brass.



FULLMAN "STAR" BUSHINGS—Are made of finest-grade Sherardized Malleable Iron to prevent rust. The threads are clean-cut, affording a close connection with the conduit. No wrench is required as they are provided with wide finger-grip ribs. No burrs. Sealed in paper boxes, and full count guaranteed.

FULLMAN "BRASS" BUSHINGS—Made of solid brass. Sizes $\frac{3}{8}$ " to 1" have smallest outside dimensions.

FULLMAN "STAR" BUSHINGS

Size, Inches	Standard Package	List Price per 100
$\frac{3}{8}$	1000	\$ 6.00
$\frac{1}{2}$	1000	6.00
$\frac{3}{4}$	100	8.00
1	100	15.00
1 1/4	100	18.00
1 1/2	50	20.00
2	50	30.00
2 1/2	25	50.00
3	25	80.00
3 1/2	25	150.00
4	25	200.00
4 1/2	20	400.00
5	20	500.00
6	15	600.00

Prices up to 8-inch on application.
Note—Fullman BRASS Bushings take same list as "STAR."

FULLMAN LOCKNUTS

Size, Inches	Standard Package	List Price per 100
$\frac{3}{8}$	1000	\$ 1.50
$\frac{1}{2}$	1000	1.50
$\frac{3}{4}$	100	2.50
1	100	4.00
1 1/4	100	6.50
1 1/2	50	8.00
2	50	10.00
2 1/2	25	15.00
3	25	30.00
3 1/2	25	60.00
4	25	100.00
4 1/2	20	140.00
5	20	160.00
6	15	200.00

Prices up to 8-inch on application.

1 1/4-inch to 8-inch, made of malleable iron. All sherardized. No rust.

UNIVERSAL INSULATOR SUPPORTS (McFeater's Patent)

—These malleable iron clamps or supports are made in four sizes to take all sizes of porcelain and glass insulators. Can be used in any position on standard steel flanges of any structural shape, such as beams, angles, channels, Z bars, round, square and flat bars, pipes, etc. Our Insulator Supports securely fasten all kinds of insulators to exposed steel framework in wiring mills, foundries, factories, shops, bridges, piers, elevated railways, subways, train sheds and similar structures. Also used in wiring arc lights, motors, dynamos, cranes, etc.

FULLMAN LOCKNUTS—Sizes are from $\frac{3}{8}$ -inch to 8-inch. The $\frac{3}{8}$ -inch to 1-inch form is made of specially-treated steel;

REFERENCES—A List of Buildings equipped with FULLMAN FLOOR OUTLETS:

BALTIMORE, MD.—
Masonic Temple Hub Bldg.
Fidelity Trust Co. Bldg.

BERKELEY, CAL.—
University of California

BIRMINGHAM, ALA.—
Birmingham Terminal Co.

BOSTON, MASS.—
Old Colony Trust Bldg.
Edison Elec. Illum. Co. Offices
Christian Science Pub. Co.
H. A. Johnson Residence
New England Telephone Bldg.
Suffolk County Court House
Perkins Institution for the Blind

BUFFALO, N. Y.—
Larkin Co. Office Bldg.
Spencer Kellogg Sons Office Bldg.
Lafayette Hotel
City and County Hall

CHARLESTON, W. VA.—
Coyle & Richardson Bldg.
Alderson-Stephenson Bldg.

CHICAGO, ILL.—
Commercial National Bank Bldg.
Peoples Gas & Coke Co. Bldg.
Corn Exchange Bank Bldg.
First National Bank Bldg.
Harris Trust & Savings Bank Bldg.
Mandel Bros. Store
Hiram Kelly Branch Library

CINCINNATI, OHIO.—
First National Bank Bldg.
Fourth National Bank Bldg.
Christ Church Memorial
Western German Bank Bldg.
Fifth National Bank Bldg.

CLEVELAND, OHIO.—
Guardian Savings & Trust Bldg.
H. Black & Co.
Wm. Taylor & Sons Co.
First National Bank Bldg.
Wm. G. Mather Residence
Technical High School
Alhambra Theatre
Plain Dealer Bldg.
Society for Savings Bank Bldg.

DALLAS, TEXAS.—
Wilson Bldg.

DES MOINES, IOWA.—
Des Moines City Hall
East Des Moines High School

DETROIT, MICH.—
Ford Bldg.

DULUTH, MINN.—
Lonsdale Bldg.
Residence Millie Bunnell
Board of Trade Bldg.
St. Louis County Court House
Alworth Bldg.

HELENA, MONT.—
U. S. Post Office Bldg.

HOUSTON, TEXAS.—
Southwestern Tel. & Tel. Co.
Southern Pacific Hospital
Southern Pacific Office Bldg.

INDIANAPOLIS, IND.—
Merchants National Bank Bldg.
City Hall

KANSAS CITY, MO.—
First National Bank Bldg.
New England National Bank Bldg.
Midland Bldg.

LEXINGTON, KY.—
Phoenix Hotel

LOUISVILLE KY.—
Seelbach Hotel
Jefferson County Court House

MILWAUKEE, WIS.—
Residence Gus. G. Pabst
Residence Jos. Wihlein
Majestic Office Bldg.
Public Service Bldg.

MINNEAPOLIS, MINN.—
Minneapolis Club
John W. Thomas & Co. Bldg.
First National Bank Bldg.
Minneapolis Armory
Asbury Hospital

NEWARK, N. J.—
Prudential Insurance Co. Bldg.
Firemen's Insurance Co. Bldg.

NEW ORLEANS, LA.—
Albert Mackie Grocery Co. Bldg.

NEW YORK, N. Y.—
Penna. R. R. Terminal Bldg.
Gimbel Store Bldg.
Fifth Avenue Bldg.
Cafe De l'Opera
American Bank Note Co. Bldg.
Sea View Hospital
Treasury Bldg.

PALM BEACH, FLA.—
Hotel Royal Poinciana

PHILADELPHIA, PA.—
Broad St. Station, P. R. R. Co.

PITTSBURGH, PA.—
St. Paul's Cathedral
Farmers' Bank Bldg.
Commonwealth Bldg.
Jones & Laughlin Bldg.
Frick Bldg.
Westinghouse Bldg.
McCreery's Store
University of Pittsburgh
Duquesne National Bank Bldg.
Allegheny General Hospital
Presbyterian Hospital
West Penn Hospital
Carnegie Bldg.
Carnegie Technical Schools
Union Station, P. R. R. Co.
Bell Telephone Bldg.
Union National Bank Bldg.
St. Francis Hospital
Mellon National Bank Bldg.
Carnegie Libraries
Washington Industrial School
Hotel Schenley
New Mercy Hospital

PORTLAND, ORE.—
Olds, Wortman & King Bldg.
Lewis Bldg.

ST. PAUL, MINN.—
Minnesota State Capitol Bldg.

SALT LAKE CITY, UTAH.—
New Utah Hotel

SAN FRANCISCO, CAL.—
Royal Insurance Bldg.

SEATTLE, WASH.—
New Washington Hotel

SYRACUSE, N. Y.—
North Side High School
Onondaga County Court House

WASHINGTON, D. C.—
New Raleigh Hotel
Howard University

Westinghouse Electric & Manufacturing Co.

ATLANTA, GA.
BALTIMORE, MD.
BIRMINGHAM, ALA.
BLUEFIELD, W. VA.
BOSTON, MASS.
BUFFALO, N. Y.
BUTTE, MONT.
CHARLESTON, W. VA.

CHARLOTTE, N. C.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
COLUMBUS, OHIO
DAYTON, OHIO
DENVER, COLO.
DETROIT, MICH.
TOLEDO, OHIO

INDIANAPOLIS, IND.
JOPLIN, MO.
KANSAS CITY, MO.
KNOXVILLE, TENN.
LOUISVILLE, KY.
LOS ANGELES, CAL.
MEMPHIS, TENN.
MILWAUKEE, WIS.

MINNEAPOLIS, MINN.
NEW ORLEANS, LA.
NEW YORK, N. Y.
OMAHA, NEB.
PHILADELPHIA, PA.
PITTSBURGH, PA.
PORTLAND, ORE.
RICHMOND, VA.
WASHINGTON, D. C.

ROCHESTER, N. Y.
ST. LOUIS, MO.
SALT LAKE CITY, UTAH
SAN FRANCISCO, CAL.
SEATTLE, WASH.
SPOKANE, WASH.
SYRACUSE, N. Y.
TACOMA, WASH.

Westinghouse Electric & Manufacturing Co. of Texas, Dallas, El Paso and Houston, Texas.

Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ont.

Mexico: Compañía Ingeniera, Importadora y Contratista, S. A. (Successors to G. & O. Braniff & Company), City of Mexico.



WESTINGHOUSE DIRECT-CURRENT ELEVATOR
MOTOR AND FULL MAGNETIC CONTROLLER



SEMI-MAGNETIC ELEVATOR
CONTROLLER



FULL-MAGNETIC ELEVATOR
CONTROLLER



WESTINGHOUSE ALTERNATING-CURRENT
ELEVATOR MOTOR AND TYPE G
ELEVATOR CONTROLLER

WESTINGHOUSE ELEVATOR MOTOR AND CONTROL EQUIPMENTS

These equipments are daily demonstrating their exceptional operating qualities in all manner of passenger and freight elevator service, on both alternating and direct-current circuits.



WESTINGHOUSE MOTOR DRIVING FIRE
PUMP



WESTINGHOUSE MOTOR DRIVING BLOWER



WESTINGHOUSE MOTOR DRIVING CEN-
TRIFUGAL PUMP

WESTINGHOUSE MOTORS FOR HEATING, VENTILATING AND PUMPING

Heating, Ventilating and Pumping are important factors in the efficient equipment of large, modern buildings, whether intended for manufacturing or public purposes. Absolutely reliable service is secured from blowers, pumps, air compressors and similar apparatus, when equipped with Westinghouse Motors.

CLASSIFICATION PAGE OF
SECTION 31

**Gas and Oil Engines and Apparatus for Light,
Power, Heating and Cooking**

(Electric Light Apparatus, etc. see Section 30)
(Lighting Fixtures, Lamps and Burners see Section 42)

Section Synopsis

A. Standard Illuminating Gas, Special-Apparatus Light Systems; Acetylene-Gas Machines; Calcium Carbide; Pintsch-Gas Light, Blau-Gas Light, and other Patent Illuminating Gas Systems; Gasoline Lighting Machines; Producer-gas Apparatus; Piping, Valves and Installation Details; Meters; Gas-saving Appliances

B. Gas Heating and Cooking Apparatus; Radiators; Acety-

lene, Gasoline and Oil Stoves, all kinds, and other Domestic and Industrial Gas Appliances; Natural-Gas Equipment and Appliances

C. Internal Combustion Gas and Oil Engines, for electric lighting, pumping and other purposes; Alcohol, Distillate, Gasoline, Naphtha, Petroleum and Producer-gas engines; Hot-air Engines, for pumping, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX			SPECIAL CLASSIFICATION		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
REGULAR CLASSIFICATION			Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.				1 to 12	13 to 24	25 to 36	37 to 48	49 to 60
A	1	Acetylene-gas light apparatus	49	Fireplace gas burners (S. 41)							
	2	Blau-gas light apparatus	50	Gas arcs and lamps (S. 42)							
	3	Calcium carbide, acetylene gas material	51	Special gas burners (S. 42)							
	TRADE NAMES AND BRANDS					A 1	Standard - Gillett Light Co., The Chicago, Ill.	10	20	25 26	49 50 51
	4	Gasoline-gas light apparatus	"Nash," gas and gasoline engines, Catalog C 1								
	5	Gas-saving appliances, sundries	"Standard," vacuum gas machine } Catalog A 1								
	6	Pintsch-gas light apparatus	"Vacogen," special gasoline								
	7	Piping, valves, gas and oil meters, and installation	"Trident," gasoline meters, S. 35 A, Catalog 4		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
	8	Producer-gas apparatus	1 to 12	13 to 24			25 to 36	37 to 48	49 to 60		
	9	Standard illuminating gas, special apparatus light system									
10	Vacuum-gas apparatus										
B	20	Domestic minor gas appliances									
		Gas heating and cooking apparatus:—									
	21	Acetylene-gas									
	22	Gasoline-gas									
	23	Natural-gas									
	24	Standard-gas									
	25	Vacuum-gas									
	26	Industrial gas appliances									
27	Oil heating and cooking stoves										
C	34	Hot-air engines, for pumping, etc.	C 1	National Meter Co. New York, N. Y.	8						
		Internal combustion engines:—									
	35	Alcohol									
	36	Distillate									
	37	Gas									
	38	Gasoline									
	39	Naphtha									
	40	Petroleum									
41	Producer-gas, all for electric light, pumping and other purposes										
SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.						Bramhall Deane Co. S. 36 A, Cat. 2 (Gas heating and cooking apparatus)					
Milwaukee Concrete Mixer and Machinery Co. S. 3, Cat. 2 (Gasoline engines)											
Neptune Meter Co. S. 35 A, Cat. 4 (“Trident” gasoline meters)											

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 12	13 to 24	25 to 36	37 to 48	49 to 60		1 to 12	13 to 24	25 to 36	37 to 48	49 to 60		1 to 12	13 to 24	25 to 36	37 to 48	49 to 60
Acetylene Apparatus Mfg Co., Chicago, Ill.	1					Deyo-Macey Engine Co..... Binghamton, N. Y.				38		Muncie Gas Engine Supply Co., Muncie, Ind.				37 38 40	
Acetylene Gas Illuminating Co., New York, N. Y.	3	21				Du Bois Iron Works..... Du Bois, Pa.	4			37 38		Murray & Tregurtha Co..... Boston, Mass.				38	
Acorn Brass Mfg. Co..... Aurora, Ill.	4					Eaton Gas Engine Co..... Eaton, Ohio				38		Myrick Machine Co..... Olean, N. Y.				37 38	
Alexander & Cox Co..... Chicago, Ill.				37 38		Economy Gas Lamp Co..... Kansas City, Mo.	4					National Supply Co..... Chicago, Ill.	7				
American Gas Furnace Co. New York, N. Y.			34			Eisenbrandt, P. B..... Baltimore, Md.				38		Newark Gas Engine Co..... Newark, N. Y.				38	
American Gas Machine Co.. Albert Lea, Minn.	4	22				Elyria Gas Power Co..... Elyria, Ohio				37 38		New-Way Motor Co..... Lansing, Mich.				37 38	
American Lava Co..... Chattanooga, Tenn.	1					Emery, V. J..... Wallaston, Mass.				38		Olin Gas Engine Co..... Buffalo, N. Y.				37 38 39	
Angola Engine & Foundry Co., Angola, Ind.				37 38 39 40		Empire Cream Separator Co. Bloomfield, N. J.				38		Pierce-Budd Co..... Bay City, Mich.				38	
Arnold's Son, G. W..... Ionia, Mich.	4	20 22		38		Fairbanks, Morse & Co..... Chicago, Ill.				37 38 39 40		Plunkett, J. E..... Chicago, Ill.				37 38	
Atlantic Engine Co., Inc., Meadville, Pa.				38		Fargo Foundry Co..... Fargo, N. D.				38		Pohl Mfg. Co., Geo. D..... Vernon, N. Y.				37 38 39 40	
Automatic Machine Co. Bridgeport, Conn.	4			37 38 40		Fifield Bros. Co..... Augusta, Me.				38		Root & Van Dervoort Engi- neering Co., East Moline, Ill.				37 38 39 40	
Backus Water Motor Co., Newark, N. J.		22 23 24		37 38		Flint & Walling Mfg. Co..... Kendalville, Ind.				38		Royal Engine Co..... Bridgeport, Conn.				38	
Bates & Edmonds Motor Co. Lansing, Mich.				37 38 39 40		Freeport Gas Machine Co..... Freeport, Ill.	4					Russell Co..... Massillon, Ohio				38	
Beilfuss Motor Co..... Lansing, Mich.				38		Gilbert & Barker Mfg. Co..... Springfield, Mass.	4 5 7	22				St. Clair Mfg. Co..... Dayton, Ohio	1	21			
Best Light Co..... Canton, Ohio	4	22				Gray Motor Co..... Detroit, Mich.				37 38 39 40		St. Marys Machine Co..... St. Marys, Ohio				37 38 39 40	
Brown, Frank P..... Philadelphia, Pa.	5 9	24				Hall Gas Engine Mfg. Co.... Byesville, Ohio				37 38		Samson Iron Works..... Stockton, Cal.		23 24		37 38 39 40	
Bruce-Macbeth Engine Co. Cleveland, Ohio	4	22 23 24		37 38 39 40		Hercules Mfg. Co..... Chattanooga, Tenn.	1					Sheffield Car Co..... Three Rivers, Mich.				37 38 39 40	
Buckeye Machine Co..... Lima, Ohio				37 38		Hettinger Engine Co..... Bridgeton, N. J.				38		Standard Gas Power Co..... Atlanta, Ga.			26		
Buckeye Mfg. Co..... Anderson, Ind.				37 38		Hubbard Motor Co..... Middleton, Conn.				38		Steiner & Co., M..... Dayton, Ohio				37 38	
Cady, Co., C. N..... Canastota, N. Y.				38		Ideal Epworth Acetylene Co. Waterloo, Iowa	1	21				Sterling Engine Co..... Buffalo, N. Y.				38	
Caillie Perfection Motor Co.. Detroit, Mich.				38 39 40		Incandescent Light & Stove Co., Cincinnati, Ohio	4 7	22				Strelinger Co., Chas. A..... Detroit, Mich.				37 38 39 40	
Challenge Co..... Batavia, Ill.				37 38 39 40		Industrial Iron Works..... Clinton, Miss.				37 38 39 40		Sunlight Gas Machine Co..... New York, N. Y.	1	21			
Chapman, H. L..... Marcellus, Mich.				37 38		International Harvester Co. of America Chicago, Ill.				37 38 39 40		Superior Mfg. Co..... Pittsburgh, Pa.	5	24			
Charter Gas Engine Co..... Sterling, Ill.				37 38		Jager Co., Chas. J..... Boston, Mass.				37 38 40		Temple Pump Co..... Chicago, Ill.	1 3 7	21		37 38 39 40	
Coleman Gas Works Mfg. Co. Cincinnati, Ohio	1	21 22				Johnson Co., S. T..... San Francisco, Cal.			27			Tirrill Gas Machine Lighting Co., New York, N. Y.	1	22		38	
Colt Co., J. B..... New York, N. Y.	1					Kemp Mfg. Co., C. M..... Baltimore, Md.	4	22 26				Union Gas Engine Co..... San Francisco, Cal.				38 39 40	
Columbus Machine Co..... Columbus, Ohio				37 38 39		Kennedy Valve Mfg. Co..... Elmira, N. Y.	7					U. S. Standard Co..... Voorheesville, N. Y.	1				
Concrete Form & Engine Co. Detroit, Mich.				38		Lamb Boat & Engine Co..... Clinton, Iowa				38		Walther-Vogler Gas Ma- chine Co., Davenport, Iowa	4 5		23		
Cooper Co., C. & G..... Mount Vernon, Ohio				37		Lawson Mfg. Co..... Homestead, Pa.		22 24				Walworth Mfg. Co..... Boston, Mass.	7				
Crane Co..... Chicago, Ill.	7					Leader Iron Works..... Decatur, Ill.				37 38 39 40		Waterloo Gasoline Engine Co., Waterloo, Iowa				38	
Crane Co., W. M..... New York, N. Y.		24	26			Lennox Machine Co..... Marshalltown, Iowa				37 38 39							
Darling Pump & Mfg. Co., Ltd., Williamsport, Pa.	7					Litchfield Mfg. Co..... Waterloo, Iowa				37 38 39							
Davis Acetylene Co..... Elkhart, Ind.	1 7					Lozier Motor Co..... Detroit, Mich.				38		Witt Co., Inc., C. E..... San Francisco, Cal.			27	40	
Detroit Engine Works..... Detroit, Mich.				37 38 39 40		Lunt Moss Co..... Hillsdale, Mich.				37 38 39		Wogoman Mfg. Co..... Greenville, Ohio				37 38	
						Middletown Machine Co..... Middletown, Ohio				37 38 39		Wolverine Motor Works, Inc. Bridgeport, Conn.				37 38 39	
						Milburn Co., Alexander..... Baltimore, Md.	1	21	26								

The Standard-Gillett Light Co.

Manufacturers of

Standard Vacuum Gas Machine and Appliances

Cable Address "Gaso"
Western Union
Universal Edition
A B C 5th Edition, and
Private Code

9-11 WEST MICHIGAN STREET
CHICAGO, ILL.

Long Distance Phone
Randolph 5430-1-2

PRODUCTS—STANDARD VACUUM COLD PROCESS GAS MACHINE; HOLLOW WIRE AND HOT PROCESS SYSTEMS; BOULEVARD ARCS; GRAVITY LAMPS; PORTABLE PRESSURE LAMPS

THE STANDARD VACUUM GAS MACHINE—Produces automatically a constantly uniform gas, and is built on entirely different principles from those heretofore employed in gas machine manufacture. It derives its name from the highly ingenious method of vaporizing gasoline, benzine or naphtha by means of a Vacuum Process.

The Standard Vacuum Gas Machine provides every convenience of the city to country homes.

It furnishes gas to light with, to cook with, gas for the laundry, and hot water for the bath.

The Standard Vacuum Gas Machine makes gas at less than 40 cents per 1,000 cubic feet.

Houses are piped in the same manner as for coal gas, and the Standard Vacuum Gas Machine furnishes gas which replaces absolutely coal gas in large cities.

The gas is led through the pipes to the various burners either for lighting, cooking or heating, all that is needed is to open cock and ignite with a match.

By this system the cheapest and best form of artificial light and heat is obtained, the machine being self-contained, simple, compact perfectly automatic and requires no skilled labor to operate.

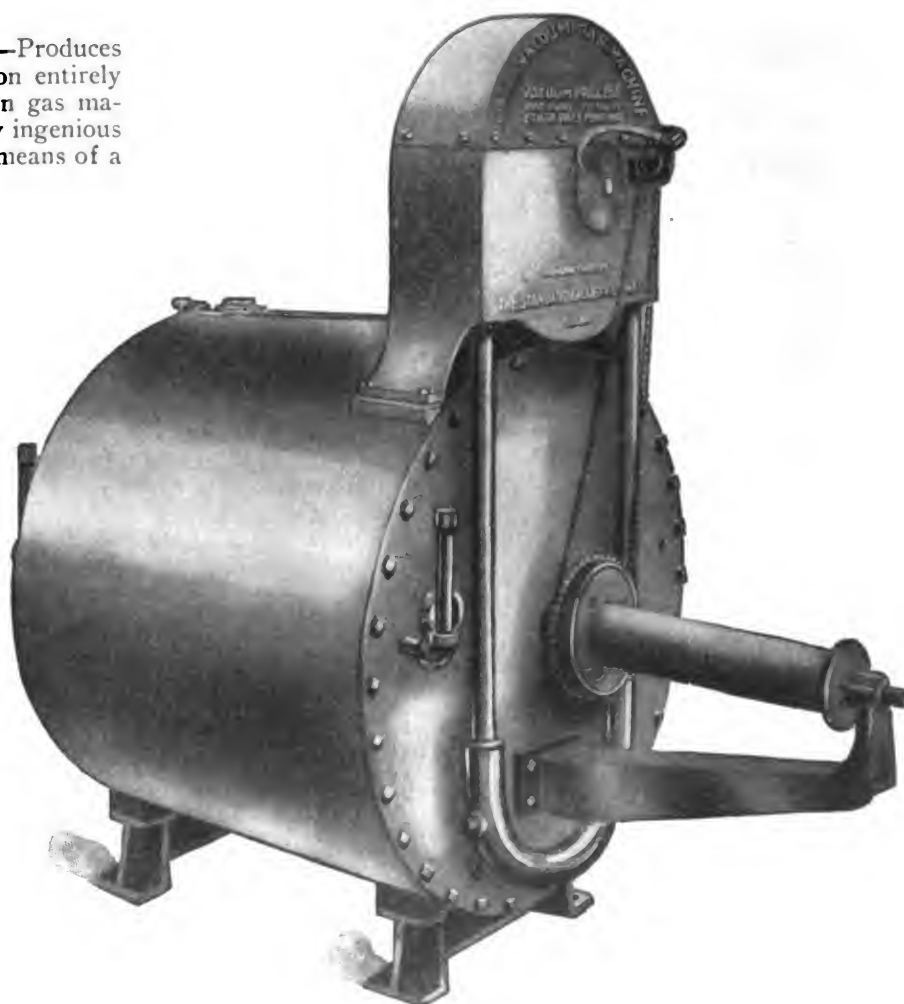
The Standard Vacuum Gas Machine completely revolutionizes the old method of blowing air through gasoline in a large carburetter.

By means of the Standard Vacuum Gas Machine for the first time, the air is automatically and uniformly carburetted into a non-condensing proportion of hydro-carbon vapor, under varying demands, fluctuations of temperature and during indefinite periods of time.

The gas produced by this machine is non-explosive, non-poisonous, non-corrosive, non-asphyxiating and its products of combustion are inodorous.

The gas produced is non-explosive, and there is no danger possible from a leak, it cannot be lighted at a broken pipe or open cock, owing to the fact that it already contains a maximum pro-

portion of air and a further admixture of air, caused perchance through carelessly allowing a cock to remain open, precludes absolutely the possibility of an explosion or asphyxiation.



SIDE VIEW OF STANDARD VACUUM GAS MACHINE

Our standard 50-light machine is substantially built of iron castings. The shipping weight is approximately 700 pounds.

Dimensions.

Extreme height.....52 inches.
Extreme width.....30 inches.
Extreme length, with windlass.....54 inches.

The machine complete as quoted generally includes 100 feet wire rope, 2 eight-wheel pulleys and hooks, weight shell with suspension hook and tank with filling device—

CODE WORD
1 to 50 Lights.....Eagle.
50 to 100 Lights.....Eagletwo.
100 to 200 Lights.....Eaglethree.

The gas is most advantageously made combustible with Standard-Gillett Special Burners. After the gas has passed through the atomizers in these burners, it can only then be lighted. The flame is of a pale blue color, and has a somewhat purple outer ring, showing perfect combustion.

In itself, the gas is normally non-luminous and possesses no lighting power, although it must be understood that this gas can, in our machine, be made so rich that it will burn like city gas without a mantle.

When used with incandescent mantles, the effect is most brilliant, far surpassing the ordinary incandescent gas or electric light.

For all purposes and places where gas is required, indoor or outdoor, in towns, villages, country homes, factories, railway stations, churches, for heating, gas fires, for laundries, enameling ovens, greenhouses, the laboratory, manual training schools, and all general domestic, commercial and industrial purposes, it is by far the best and cheapest system in existence.

BURNERS—Science has proven that ordinary incandescent gas burners, that employ the so-called Bunsen principle, do not render perfect efficiency. This is due to the fact that in the Bunsen flame there is a dead cone, and that only at a certain given point from the burner gauze is the Bunsen flame intensely hot. The burners used with Standard Vacuum Gas employ entirely new scientific principles. This flame is entirely without a dead cone, and a flame of 1,800° F. results from any part of the flame, whether close to the gauze or farther away from it. The advantage of this is clearly apparent in that it will not only heat mantles to a thorough incandescence with less volume, but is also especially adaptable for ranges, stoves, laboratory burners and for commercial purposes.

Tests recently made have proven the facility with which a temperature of 400° to 500° F. is maintained in the bakeoven in our ranges for a long period of time, such, for instance, as is needed in baking bread and roasting large roasts.

The fuel employed in making the gas in the Standard Vacuum

Gas Machine is called Vacogen (patented). Vacogen is no ordinary gasoline, but is a product obtained from natural gas wells, condensed and liquified. Owing to its adaptability for the Standard Vacuum Gas Machine, which we have determined after exhaustive and expensive tests, we stand ready to supply same to users of our machines at any place in the United States, and by reason of our direct connection with the operators, we are in the position to furnish this fluid at approximately 15 cents per gallon, within a radius of 300 miles from every large center.

As two gallons of Vacogen will make a most satisfactory grade of Standard Vacuum Gas, it will be seen that the cost of 1,000 cubic feet of gas is somewhat less in extreme cases and remotest locations than 40 cents per 1,000 cubic feet.

Vacogen has peculiar and highly beneficial heat values, and when two gallons of same are used in the Standard Vacuum Gas Machine, for 1,000 cubic feet of Hydro-Carbon Gas, it has great heat values, and a mixture of such richness resulting in from 400 to 450 B.T.U.'s per cubic foot.

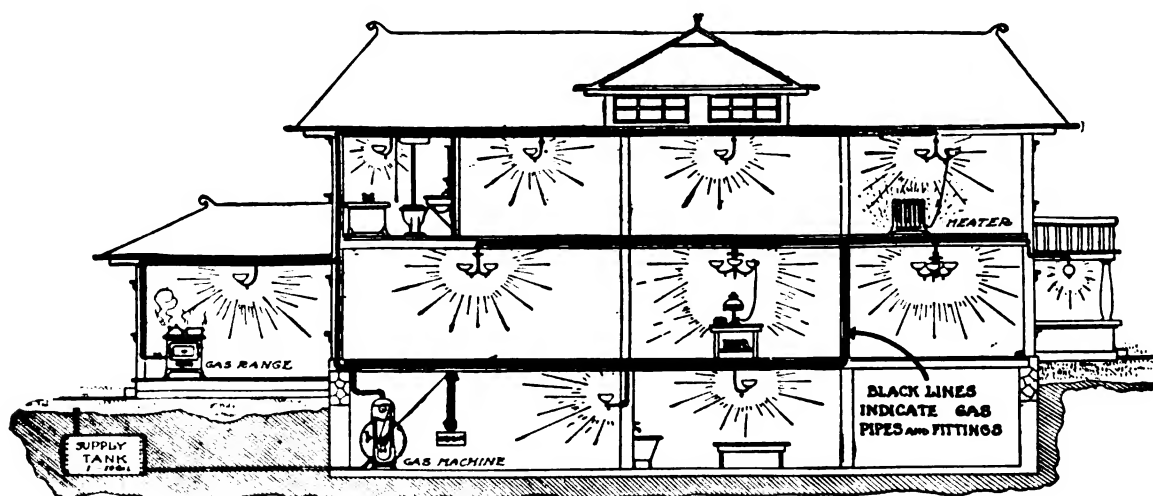
Owing to the fact that such a Hydro-Carbon Gas develops much less H₂O than city gas, it is approximately 18% hotter, and therefore a cubic foot of this gas closely approaches in heat value that of a cubic foot of city coal gas.

FIXTURES—As any gas fixture or piping can be used, it would require a limitless number of plates covering designs suiting the many and varied individual requirements. Upon request, designs will be forwarded covering our line of fixtures.

GUARANTEE—Each machine is sent out under absolute guarantee to give perfect satisfaction.

AIR GAS—Made by Standard Vacuum Gas Machine:

- 1/18th the cost of Electricity.
- 1/13th the cost of Acetylene.
- 1/8 the cost of Kerosene.
- 1/4 the cost of City Gas.



STANDARD VACUUM GAS MACHINE PLANT

Showing Location of Machine, Storage Tank, Regular Gas Piping and Various Appliances

National Meter Company

Nash Gas and Gasoline Engines

Established 1870

84-86 CHAMBERS STREET
NEW YORK

John C. Kelley, Pres't

CHICAGO

BOSTON

PITTSBURGH

SAN FRANCISCO

LOS ANGELES

LONDON

For our Catalog on Water Meters see Section 35A, Cat. 3

PRODUCT—NASH GAS AND GASOLINE ENGINE

NASH GAS ENGINES—These engines are of the vertical, four-cycle, single-acting type, and are built in sizes up to 425 HP. to operate on artificial or natural gas, gasoline, distillate or alcohol, and in sizes up to 300 HP. to operate on producer gas. Nash Gas Engines have been on the market for over twenty-five years and represent the best and latest ideas of construction.

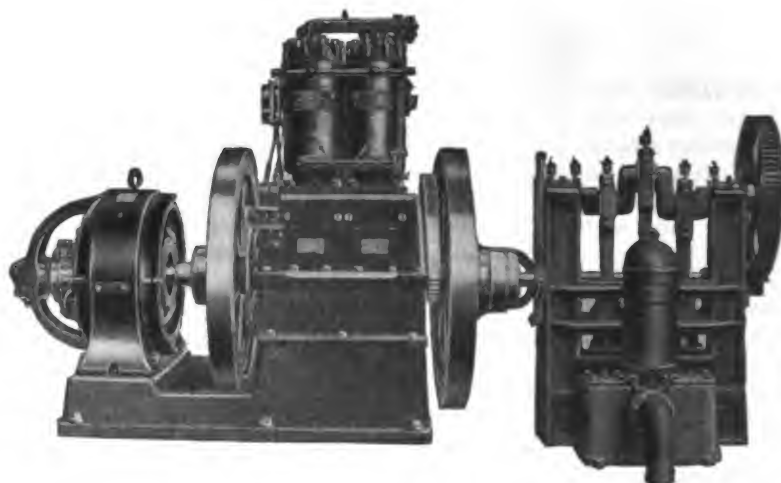
They are designed and built primarily to meet the demand for a gas engine to operate under steam-engine regulation, reliability and general conditions. At the same time the engine in connection with a suction-type of producer will, from one pound of coal, generate two and one-half times the amount of power that can be taken from the highest type of steam engine, even in the larger sizes. The size of the installation does not materially affect the economy of a producer gas plant.

REGULATION AND USE—The engine is closely regulating on varying loads, and is provided with a governor which determines the fuel consumption according to the engine load. The engine is, therefore, largely used for generating electricity for all power requirements, such as operating textile machinery, town or city lighting, wireless telegraphy, gas pressure regulators, charging storage batteries and wherever steady power is required.

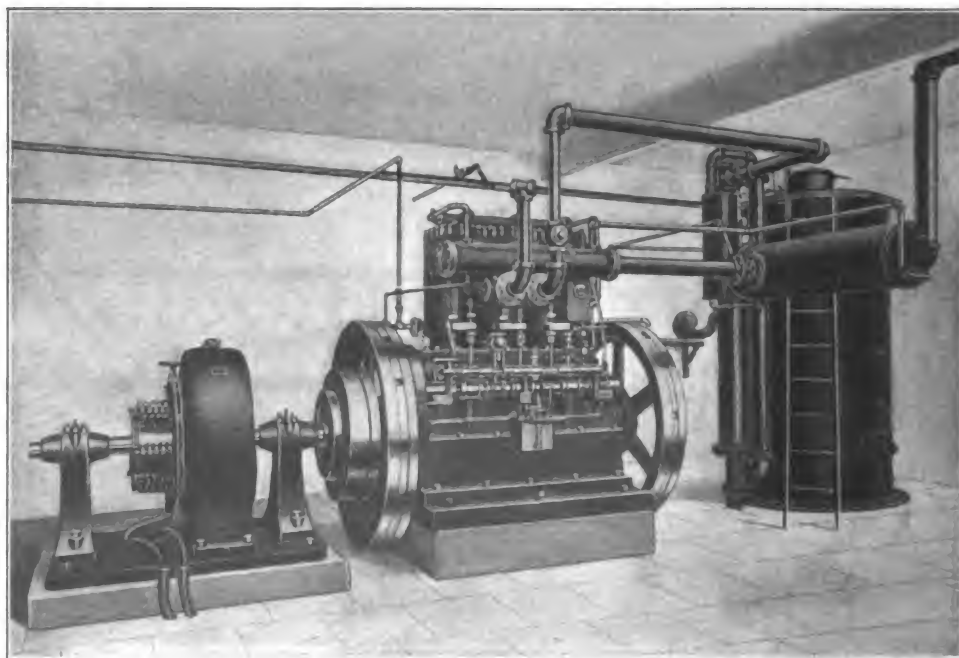
Direct-connected to power pumps, the engine is used for furnishing water for private estates, city water supply, and for high-pressure fire protection service.

ECONOMY—In connection with a suction producer gas plant and a triplex power pump the Nash Gas Engine shows a combined efficiency of over 150,000,000 foot pounds duty per 100 pounds fuel consumed. We have installed many municipal plants utilizing producer gas power for pumping water, and using in the producer anthracite or bituminous coal, peat, lignite, coke or charcoal.

QUALITY—The engine throughout is built of the best material obtainable for the purpose, while our workmen are specialists in this line.



NASH GAS ENGINE DIRECT-CONNECTED TO DYNAMO AND PUMP



PRODUCER OUTFIT AND NASH GAS ENGINE DIRECT-CONNECTED TO DYNAMO

"A.B.C." SYSTEMS

**CLASSIFICATION PAGE OF
SECTION 32**

Mechanical Refrigeration, Ice-making, Refrigerators

(For Insulating Materials see Section 26D)

(For Cold-Pipe and Tank Covering see Section 28D)

Section Synopsis

A. AMMONIA MACHINES and other types, for Cold-Storage Installation and Ice-Making Plants; Refrigerating Apparatus and Installation, for hotels, institutions, stores, residences

Drinking Water Cooling and Circulating Plants; Valves and Fittings; Cold-Storage Doors and Windows; Abattoir Doors; Ice Chutes, Recording Doors, etc.; Construction of Buildings

**and Rooms and Insulation Work in connection, for buildings
pipes and tanks, etc.**

B. PORTABLE REFRIGERATORS (Ice Boxes), all styles of construction; Refrigerator Showcases and Store Fixtures; Ice-box Refrigerating Installations for hotels, institutions, etc.

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX

REGULAR CLASSIFICATION

A	1	Abattoir doors
	2	Ammonia pipe and fittings, valves, gauges
	3	Ammonia refrigerating and ice-making machines and apparatus
	4	Brine coolers and tanks
	5	Cold storage construction, buildings, rooms, refrigeration equipment
	6	Cold storage doors and windows
	7	Dioxide of sulphur and similar refrigerating and ice-making machines and apparatus
	8	Drinking-water cooling and circulating plants
	9	Ice chutes, recording doors, etc.
	10	Ice-making plants, commercial
	11	Installations, for hotels, institutions, stores, residences, etc.
	12	Insulation work for buildings, pipes and tanks, etc., all standard materials

B	24	Ice-refrigerating installations for hotels, institutions, etc.
		Portable refrigerators (ice boxes):—
	25	Ceramic-tile lined
	26	Crockery compartments
	27	Glass-tile lined
	28	Metal-lined, plain, porcelain enameled
	29	Solid porcelain compartments
	30	Refrigerator showcases and store fixtures

SPECIAL CLASSIFICATION

Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.

41	Builders' general hardware (S. 19 A)
42	Cold-pipe and tank covering, asbestos composition (S. 28 D)
43	Insulating materials:—
44	Asbestos felts, paper (S. 26 D)
	Hair felt, tarred felt, cork insulation (S. 26 D)

TRADE NAMES AND BRANDS

"Acme" and "Eureka" corkboard	S. 28 D, Catalog 1
"Nonpareil" cork covering	
"Arctic Junior," refrigerating machine	Catalog A 3
"Arctic-Pownall," shellbrine coolers	
"Audiffren-Singrum," refrigerating machine, Catalog A 5	
"Racine," refrigerating and ice-making apparatus, Catalog A 6	

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
A 3	Arctic Ice Machine Co., The Canton, Ohio	2 3 4 10	11 12			42 43 44
A 2	Gloekler Co., Bernard Pittsburgh, Pa.	1 2 3 5 6 10	11 12	25 26 27 28 30		42 43 44

Manufacturers having Catalog data in this Section

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
A 5	Johns - Manville Co., H. W. New York, N. Y.	7	11 12			42 43 44
B 1	Monroe Refrigerator Co. Lockland, Cincinnati, Ohio			24 29		
A 1	Orr & Lockett Hardware Co. Chicago, Ill.	5 6	11 12	24		41 42 43 44
A 6	United Refrigerator & Ice Machine Co. Kenosha, Wis.	2 3 4 5 6 8 9 10	11 12	30		44
A 4	York Mfg. Co. York, Pa.	2 3 4 8 10				

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.

Armstrong Cork Co.
S. 28 D, Cat. 1
(Cork insulation for cold storage work, pipes and tanks)

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 60		1 to 10	11 to 20	21 to 30	31 to 40	41 to 60		1 to 10	11 to 20	21 to 30	31 to 40	41 to 60
Alaska Refrigerator Co. Muskegon, Mich.			27 28			De La Vergne Machine Co. New York, N. Y.	2 3 10					Odorless Refrigerator Co. Chattanooga, Tenn.				28	
Allen Dense Air Ice Machine. New York, N. Y.	10					Dillingham Mfg. Co. Sheboygan, Wis.			28			Perkins Mfg. Co. St. Paul, Minn.	5 6				
Althoff Mfg. Co. Denver, Colo.	2 3 10	11				Du Bois Mfg. Co. New York, N. Y.			28			Ranney Refrigerator Co. Grand Rapids, Mich.			28		
American Linde Refrigerator Co. New York, N. Y.	2 3 10					Edwards Steam Specialty Co. Chicago, Ill.	2					Reading Iron Co. Reading, Pa.	2				
American Machine Co. Louisville, Ky.	3 10					Elkins Refrigerator & Fix- ture Co. Elkins, W. Va.		11	25			Refrigerating Supplies Co. New York, N. Y.	6 9				
Armstrong Machinery Co. Spokane, Wash.	1 2 3 5 6 9 10	11				Fort Smith Refrigerator Works Fort Smith, Ark.	5 6			27 28		Remington Machine Co. Wilmington, Del.	2 3 10	11			
Automatic Refrigerator Co. Hartford, Conn.	4 6 10	11				Frisk Co. Waynesboro, Pa.	2 3 10	11				Rhineland Refrigerator Co. Rhineland, Wis.				28	
Baker Ice Machine Co. Omaha, Neb.	2 3 5 10	11				Hallam, P. W. Brooklyn, N. Y.	2 3 10	11				Ridgway Refrigerator Co. Ridgway, Pa.	2 3 5	11		28	
Baldwin Refrigerator Co. Burlington, Vt.	2 3 5 6	11	27 28			Hall & Son, A. D. Charleston, Boston, Mass.				28		Ruemmel-Dawley Mfg. Co. St. Louis, Mo.	1 2 3 6 9 10	11			
Banta & Bender Co. Ligonier, Ind.	5		25 26 27 28			Heinz & Munschauer. Buffalo, N. Y.				28		Seeger Refrigerator Co. St. Paul, Minn.	5 6	11			
Banta, Woods, Co. New York, N. Y.		11	27 28			Hill & Co., C. V. Trenton, N. J.	1 5 6	11	25 27 28			Shirk Refrigerator Co. Chicago, Ill.				26 27 28	
Belding-Hall Co. Belding, Mich.			28			Huetteman & Cramer Co. Detroit, Mich.	2 3 10	11				Spangler Mfg. Co. York, Pa.	3 10	11			
Bohn Syphon Refrigerator Co. New York, N. Y.		11	28			Isbell-Porter Co. Newark, N. J.	3					Steele & Condict. Jersey City, N. J.	3 5 10	11			
Born Packers Supply Co. Chicago, Ill.	1 2 3 6	11				Jewett Refrigerator Co. Buffalo, N. Y.	3 5 6	11	25 27 28			Stevens Co., A. B. Toledo, Ohio	6 9			28	
Boyer, Francis H. & Chas. W. Somerville, Mass.	5 6 10	11				Johnson Co. Lorain, Ohio	10	11				Stevenson Co. Chester, Pa.	1 6 9				
Brecht Co. St. Louis, Mo.	1 3 5 6	11				Jones Door Mfg. Co. Hagerstown, Md.	5 6 9					Success Mfg. Co. Gloucester, Mass.				28	
Brunswick-Balke-Collender Co. New York, N. Y.	5 6		25 27			Kroeschell Bros. Co. Chicago, Ill.	9 10	11				Triumph Ice Machine Co. Cincinnati, Ohio	2 3 5 6 9 10	11			
Brunswick Refrigerating Co. New Brunswick, N. J.	2 3 10	11				"Lorillard" Refrigerator Co. New York, N. Y.	2 3 5 6	11	25 27 28			United Iron Works Co. Springfield, Mo.	2 3 10	11			
Burge Machine Works. Chicago, Ill.	2 3 5 10	11				McCray Refrigerator Co. Kendalville, Ind.	5	11	27 28			Van Zandt-Moore Iron Works Fort Worth, Tex.	2 3 5	11			
Carbondale Machine Co. Carbondale, Pa.	10					McKee Refrigerator Co. Brooklyn, N. Y.			27 28			Viking Refrigerator & Mfg. Co. Kansas City, Kans.	1 5 6	11	25 27		
Challenge Refrigerator Co. Grand Haven, Mich.			28			Mace & Co., L. H. New York, N. Y.		11	27 28			Vilter Mfg. Co. Milwaukee, Wis.	2 3 10	11			
Chrysler & Koppin. Detroit, Mich.	5	11	27			Maine Mfg. Co. Nashua, N. H.	5			28		Vogt Machine Co., Henry.... Louisville, Ky.	2 3 10				
Cincinnati Butchers' Supply Co. Cincinnati, Ohio	1 5 6 9					Metal Stamping Co. Jackson, Ill.				28		Voss Ice Machine Works. New York, N. Y.	2 3 10				
Cleveland Store Fixture Co. Cleveland, Ohio			27 28			National Refrigerator & Butchers' Supply Co. Champaign, Ill.	1 5 6		28			White Enamel Refrigerator Co. St. Paul, Minn.		11		28	
Creamery Package Mfg. Co. Chicago, Ill.	2 3 10	11				Newburgh Ice Machine & Engine Co. Newburgh, N. Y.	3 10					Williams & Co., Wm. New York, N. Y.				27 28	
Crystal Refrigerator Co. Fremont, Neb.			28			Niebling Co., F. W. Cincinnati, Ohio	2 3 5 10	11	26 28			Wolf Co., Fred W. Chicago, Ill.	2 3	11			

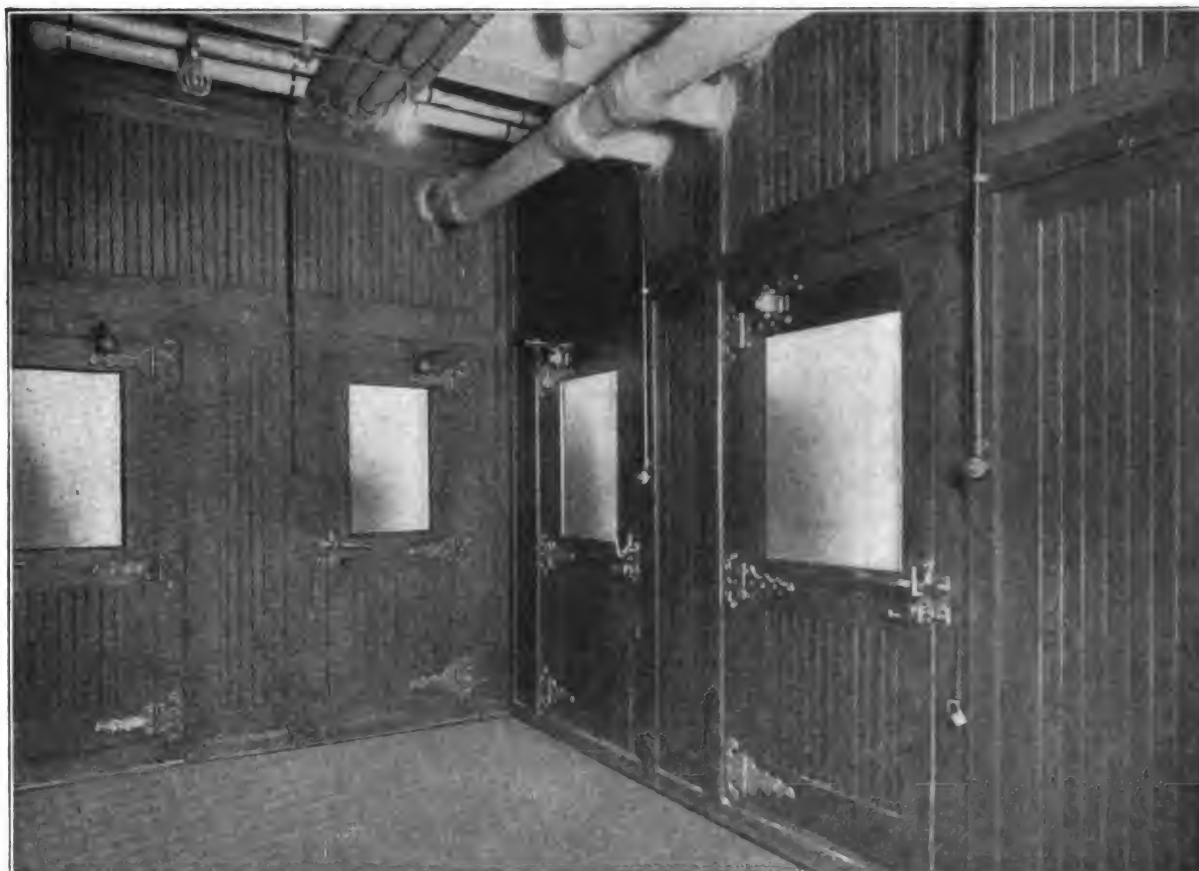
Orr & Lockett Hardware Company

Refrigeration Design, Refrigerators, Cold Storage Fixtures and Hotel Kitchen Equipment, etc.

Telephone
Central 551

14-16 WEST RANDOLPH STREET
CHICAGO, ILL.

Factories
Corner 22nd and Jefferson Streets



A SECTION OF THE COOLING ROOMS IN THE NEW BLACKSTONE HOTEL, CHICAGO, ILL.
INSTALLED BY ORR & LOCKETT HARDWARE COMPANY

PRODUCTS—Designers and builders of COOLING ROOMS, REFRIGERATORS, COLD-STORAGE, MARKET AND GROCERY FIXTURES; HOTEL AND RESTAURANT KITCHEN EQUIPMENT; also, BUTCHERS' AND PACKERS' MACHINERY, TOOLS AND SUPPLIES

SPECIAL SERVICES—Many of the best known and largest architectural offices turn over to us to design the entire refrigerator and cold-storage equipment on our record of having successfully built refrigerators and cooling rooms for the last forty years. The fact that our product is the accepted standard of efficiency, and the further fact that practically every club, hotel and institution in Chicago has its refrigeration equipment designed and installed by this firm on a non-competitive basis, will give a good idea of the position which we hold in built-to-order refrigerator work.

ECONOMY—The Orr & Lockett System of Refrigeration is an investment not measured by the first cost, but by the absolute preservation of all perishable material entrusted to it

throughout the entire life of the building. The money value of meats and vegetables which are often lost in a cheap refrigerator, during its short life, will generally pay for the installation which we would recommend for the same location.

CRITICISM—In no other city in the country does a refrigerating system have such close inspection or such expert criticism as in Chicago with its tremendous packing-house industry, of which refrigeration forms so important a factor. The Orr & Lockett System has been repeatedly used and recommended by the largest packing houses, both by themselves and where their experts have been called into consultation.

CONSULTATION—We shall be very glad to extend the list of offices where we are called into consultation.

We not only design the entire refrigerator and cooling-room equipment, but will lay out and specify the kitchen and pantry and service equipment best suited to the needs of any hotel, club or institution. On contracts placed with us our

experts will go to any part of the country at the suggestion of the architect. In the preliminary correspondence it will often save time to send us blueprints of the kitchen, dining-room and service floors together with a statement of the number of rooms in the house.

REFERENCES—From the list which comprises practically every installation of prominence in the Central States, we give below representative installations which prove how thoroughly our past reputation has given us control of the special refrigerator problem:

PUBLIC AND PRIVATE INSTITUTIONS

University of Chicago, Keeley Hall, Chicago, Ill.
St. Ignatius College, 312 West Twelfth Street, Chicago, Ill.
Illinois Manual Training School, Glenwood, Ill.
Chicago Polyclinic Hospital, La Salle and Oak Streets, Chicago, Ill.
Home for Destitute Crippled Children, 46 Park Avenue, Chicago, Ill.
Hutchinson Hall, Fifty-Eighth Street and Ellis Avenue, Chicago, Ill.
Chicago Orphan Asylum, Fifty-First Street and Grand Boulevard, Chicago, Ill.
Home for Aged Jews, Sixty-Second Street and Drexel Boulevard, Chicago, Ill.
Mercy Hospital, Twenty-Sixth Street and Calumet Avenue, Chicago, Ill.
Convent of Mercy, Forty-Ninth Street and Evans Avenue, Chicago, Ill.
Academy of Sacred Heart, Lake Forest, Ill.
Creighton College, Omaha, Neb.
University of Illinois, Champaign, Ill.
St. Mary's Hospital, Green Bay, Wis.
Lealie Keeley Company, Dwight, Ill.
Finley Hospital, Dubuque, Iowa
South Dakota Hospital for Insane, Yankton, S. D.
St. Mary's Training School, Fehevillie, Ill.

CLUBS

Homewood Country Club, Homewood, Ill.
Midlothian Club, Midlothian, Ill.
Riverside Golf Club, Riverside, Ill.
Union League Club, Jackson Boulevard, Chicago, Ill.
Hamilton Club, Clark and Monroe Streets, Chicago, Ill.
South Shore Country Club, Seventy-First Street, Chicago, Ill.
Worhan's Athletic Club, Chicago, Ill.
Glenview Golf and Polo Club, Glenview, Ill.
Coleman Lake Club, Coleman Siding, Wis.
Exmoor Country Club, Highland Park, Ill.
University Club, Monroe Street and Michigan Avenue, Chicago, Ill.
Calumet Club, Twentieth Street and Michigan Avenue, Chicago, Ill.
Chicago Athletic Club, Michigan Avenue and Monroe Street, Chicago, Ill.

HOTELS

Blackstone Hotel, Chicago, Ill.
La Salle Hotel, Madison and La Salle Streets, Chicago, Ill.
Chicago Beach Hotel, Fifty-First Street and Lake Avenue, Chicago, Ill.
Wellington Hotel, Wabash Avenue and Jackson Street, Chicago, Ill.
Lexington Hotel, Michigan Avenue and Jackson Street, Chicago, Ill.
Kaiserhof Hotel, 266 South Clark Street, Chicago, Ill.
Morrison Hotel, Clark and Madison Streets, Chicago, Ill.
New Brevoort Hotel, 143 Madison Street, Chicago, Ill.
Palmer House, State and Monroe Streets, Chicago, Ill.
Congress Hotel and Annex, Michigan Avenue and Congress Street, Chicago, Ill.

Hotel Del Prado, Fifty-Ninth Street and Washington Avenue, Chicago, Ill.
New Sherman House, Clark and Randolph Streets, Chicago, Ill.
Hotel Metropole, Twenty-Third Street and Michigan Avenue, Chicago, Ill.
Planter's Hotel, Madison and Clark Streets, Chicago, Ill.
Kenwood Hotel, Forty-Seventh Street and Kenwood Avenue, Chicago, Ill.
Lakota Hotel, Thirtieth Street and Michigan Avenue, Chicago, Ill.
Grand Pacific Hotel, Clark and Jackson Streets, Chicago, Ill.

DEPARTMENT STORES, CAFES

Marshall Field's, State and Washington Streets, Chicago, Ill.—Storage and Restaurant Coolers
Mandel Bros., State and Madison Streets, Chicago, Ill.—Storage and Restaurant Coolers
Carson, Pirie & Scott, State and Madison Streets, Chicago, Ill.—Storage and Restaurant Coolers
Hilman & Company, State and Washington Streets, Chicago, Ill.—Fresh Meats, Delicatessen, Fish and Restaurant Coolers
Boston Store, State and Madison Streets, Chicago, Ill.—Fresh and Smoked Meats, Delicatessen and Restaurant Coolers
Siegel, Cooper & Co., State and Van Buren Streets, Chicago, Ill.—Restaurant and Storage Coolers
Rothschild & Co., State and Van Buren Streets, Chicago, Ill.—Fresh and Smoked Meats, etc.

WHOLESALE MEAT AND PROVISION DEALERS

Irwin Bros. Co., 449-451 State Street, Chicago, Ill.
Libby, McNeill & Libby, 242 South Water Street, Chicago, Ill.
Union Stock Yards Co., 9 Exchange Avenue, Chicago, Ill.
Froehling & Heppe, 16-18 State Street, Chicago, Ill.
Cudahy Packing Co., 252 South Water Street, Chicago, Ill.

RESTAURANTS

Rector's Oyster House, Clark and Monroe Streets, Chicago, Ill.
John Z. Vogelsang, 178 Madison Street, Chicago, Ill.
New Chicago & Northwestern Station, Chicago, Ill.
Philip Henrici Co., 108 Randolph Street, Chicago, Ill.
Chicago Oyster House, 140 Madison Street, Chicago, Ill.
Café Lakota, National Life Building, Chicago, Ill.
Fred Harvey, Dearborn Street Railroad Station, Chicago, Ill.
John R. Thompson, 75 Randolph Street, Chicago, Ill.
Tom Jones, 175 Jackson Boulevard, Chicago, Ill.
Kuntz, Remmler Co., 303 Wabash Avenue, Chicago, Ill.
Henrici Co., Inc., 79 Van Buren Street, Chicago, Ill.

SPECIAL FAMILY REFRIGERATORS

Marshall Field, Jr., 1919 Prairie Avenue, Chicago, Ill.
Harold F. McCormick, Bellevue Place, Chicago, Ill.
L. E. Laffin, Lake Forest, Ill.
J. Hobart Moore, Lake Geneva, Wis.
Mrs. Watson Blair, 164 Rush Street, Chicago, Ill.
F. O. Lowden, 1012 Prairie Avenue, Chicago, Ill.
Bishop Quigley, State Street and North Avenue, Chicago, Ill.
Leon Mandel, 3409 Michigan Avenue, Chicago, Ill.
Mrs. Chas. Netcher, 4427 Drexel Boulevard, Chicago, Ill.
V. F. Lawson, Burton Place and Lake Shore Drive, Chicago, Ill.
Wm. Grace, Barrington, Ill.
E. A. Renwick, Sheridan Road, Chicago, Ill.
Nathaniel Sears, Lake Geneva, Wis.
F. M. Blount, Wheaton, Ill.
E. A. Hamill, Lake Forest, Ill.
Arthur Huertley, Oak Park, Ill.
A. E. Wells, Fantana, Wis.
Fred E. Lee, Dowagiac, Mich.

Bernard Gloekler Company

Refrigerators and Cold Storage Work

ESTABLISHED IN 1856

1127 TO 1133 PENN AVENUE
PITTSBURGH, PA.

INCORPORATED IN 1905

PRODUCTS—HOTEL KITCHEN EQUIPMENT; REFRIGERATORS FOR THE HOME AND FOR EVERY OTHER KNOWN PURPOSE; REFRIGERATING AND ICE-MAKING MACHINERY; COLD STORAGE INSULATION, DOORS, WINDOWS, HARDWARE, TRACKING, ETC.; BUTCHERS' SUPPLIES AND EQUIPMENT

DESCRIPTION—Our Hotel, Restaurant and Café Departments are perfect in every detail.

Our Refrigerators, Refrigerating Machinery and Cold-Storage Equipments are designed under the guidance of expert Architects and Engineers. We furnish plans, specifications and estimates on this class of work and also for Abattoirs, Packing Houses, Cold-Storage Plants, etc.

From our many years' experience in the Butcher Supply and Equipment Departments our goods in these lines are complete and in keeping with modern progress.

We furnish the most complete line of Cork Insulation, Storage and Zero Doors. All Doors are hung in their own frames and are made with or without sill at bottom. Closed by gravity and latched with patent spring fasteners, and by the operation of hinge and latch the airtight seal on the Doors is made complete by the use of a rubber gasket between Door and Door Frame of Storage Room.

DETAIL OF OPERATION—As shown in our cut, our Sill-less Doors close on level of floor line, thus allowing trucks, barrels, etc., to pass through opening with ease. The automatic device to close space between bottom of Door and floor level is operated by the exclusive use of Refrigerator latch. The adjustable support at top of Door prevents sagging and reduces strain on hinges, thus making Door swing easily. Our cut shows a right-hand Door. All orders should state whether right- or left-hand Door is wanted.

All frames made for an 8" wall unless otherwise ordered.

HARDWARE—All Hardware, Hinges and Fasteners are extra heavy, made of malleable iron or steel heavily tinned, or of solid brass, as desired.

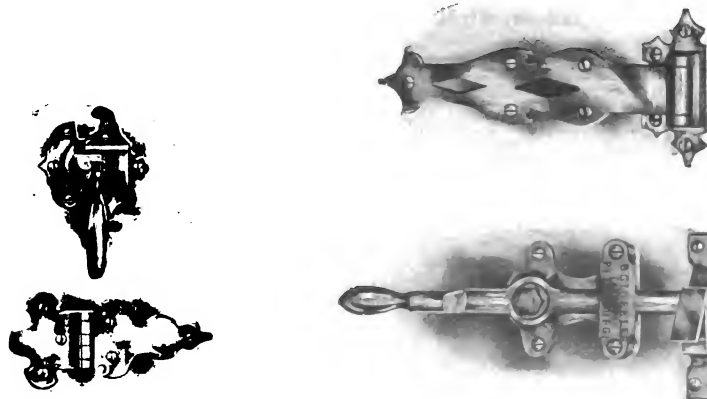


NEW GLOEKLER COLD STORAGE DOOR
(Showing Door Partly Open)

PRICE OF DOOR AND FRAME COMPLETE

In the Clear When Width Height Ft. In. Ft. In.	Yellow Pine Tinned Hardware	Yellow Pine Brass Hardware	Oak Tinned Hardware	Oak Brass Hardware
3-0 x 6-0	\$43.00	\$54.00	\$48.00	\$59.00
3-6 x 6-0	46.00	57.00	50.00	61.00
4-0 x 6-0	50.00	61.00	54.00	65.00
4-0 x 6-6	53.00	64.00	57.00	68.00
4-6 x 6-0	54.00	65.00	59.00	70.00
4-6 x 6-6	57.00	68.00	62.00	73.00

Opening in wall for frame should be 6 inches wider and 3 inches higher than above sizes. Prices of special sizes or fireproof construction on application.



ILLUSTRATIONS OF SOME OF OUR SPECIAL HARDWARE

"A.B.C." SYSTEMS

The Arctic Ice Machine Co.

Manufacturers of
Ice-Making and Refrigerating Machinery
CANTON, OHIO

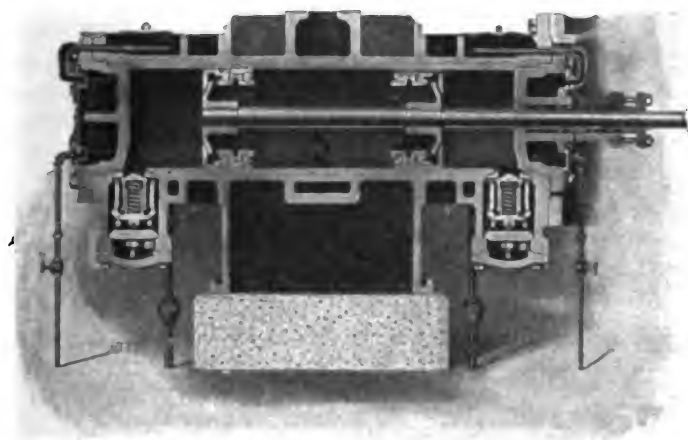
PRODUCTS—ARCTIC HORIZONTAL AND VERTICAL REFRIGERATING MACHINES, of every capacity; ARCTIC-POWNALL SHELL BRINE COOLERS; AMMONIA FITTINGS, VALVES AND SUPPLIES; STEAM CONDENSERS, BRINE TANKS, DIRECT EXPANSION PIPING, ETC.

TECHNICAL DESCRIPTION OF HORIZONTAL COMPRESSOR—The ammonia suction valves are located in the pistons, two pistons being carried on the same rod. This construction combines the efficiency of the single-acting type of compressor with the peculiar advantages of the horizontal double-acting machine. Pumps wet or dry gas with equal facility. The only ammonia compressor built with springless, mechanically-oper-

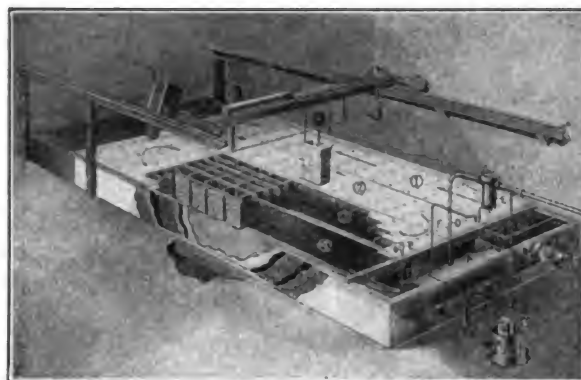
On this, as well as the larger Arctic outfits, only the highest-grade material is used, and nothing but strictly wrought-iron pipe and sweat-soldered joints are used on all our ammonia pipe-work.

Bulletin 2-B fully describes the Arctic Junior.

THE ARCTIC-POWNALL SHELL BRINE COOLER—The cooler consists of a shell of flanged steel, with heads welded in. No seams or rivets in the entire construction, therefore no leakage. The brine is forced throughout tank in direction of arrows and as indicated by numerals, the ammonia being introduced into shell cooler "A," at which point it cools the brine while the latter is passing through the tubes and around the shell. All



SECTIONAL VIEW OF HORIZONTAL COMPRESSOR



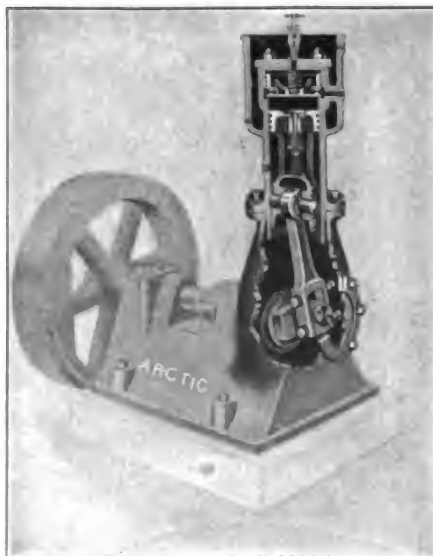
ARCTIC-POWNALL SHELL BRINE COOLER
Patented May 31st and July 19th, 1910.

ated suction valves and cork insulated cylinder. Location of discharge valves insures perfect drainage.

Area of suction valves is three to four times larger than in any other ice machine built, enabling immense capacity in limited space.

Catalog 21-B fully describes and illustrates the Arctic Ammonia Compressor.

THE ARCTIC JUNIOR REFRIGERATING MACHINE—Built especially to fill the demand for a small-capacity, high-quality unit, of from 2 tons refrigerating capacity to 6 tons. Suitable for small hotels, creameries, restaurants and any establishment using refrigerating service without skilled attention. Built "foolproof," all parts interchangeable, and may be operated with any available form of power.



THE ARCTIC JR. REFRIGERATING UNIT

ammonia impurities are eliminated in the purifying device noted as "G," "H" and "K."

ADVANTAGES—The Arctic - Pownall Brine Cooler is preferable to any coil system for the following reasons:

- Low first cost;
- Ease of operation; there are no expansion valves;
- Smaller tank space required;
- Quicker and more uniform freezing than with coils;
- Absolutely dry gas, due to large liberating surface;
- Long life to ice cans, no coils to strike.

SPECIFICATIONS AND PRICES—We are glad at all times to submit complete specifications and prices on all forms of installations of ice-making and refrigerating machinery.

"A.B.C." SYSTEMS

York Manufacturing Co.

Ice-Making and Refrigerating Machinery

MAIN OFFICE AND WORKS

YORK, PA.

Eastern Branch Offices

BOSTON, 88 Broad Street
NEW YORK, 72 Trinity Place
PHILADELPHIA, 140 N. Tenth Street
PITTSBURGH, 337 Water Street
ATLANTA, 13 S. Forsyth Street

General Western Office

CHICAGO, Monadnock Building
Canadian Agents
MONTREAL, Kent Co., Ltd.
Australian Agents
SYDNEY, Waygood, Ltd.

Western Branch Offices

CHICAGO, 26-28 N. Clinton Street
ST. LOUIS, 200 N. Main Street
HOUSTON, 710 Franklin Avenue
LOS ANGELES, United Iron Works
OAKLAND, United Iron Works
SEATTLE, United Iron Works

PRODUCTS—ICE-MAKING AND REFRIGERATING MACHINES, AND ALL AUXILIARY MACHINERY FOR ICE-MAKING AND REFRIGERATING PLANTS

DESCRIPTION—We build three types of machines: Vertical Single-Acting, Compression; refrigerating capacity, $\frac{1}{2}$ –500 tons. Horizontal Double-Acting, Compression; capacity $2\frac{1}{2}$ –500 tons. Ammonia-Absorption Type, in all sizes. Each type of machine is made with engine or for belt drive.

Auxiliary equipment made at our factory includes Engines, Boilers, Tanks; Ammonia Condensers of the atmospheric, double-pipe, and shell types; Brine Coolers of the shell and double-pipe types; Ammonia Receivers, Pipe Coils, Ammonia Valves and Fittings of all kinds, Ice Cans, Distilling Apparatus, and all other Accessories needed to equip a complete plant.

CONSTRUCTION—The illustrations show the construction and design of some of our standard machines. Bulletins describing these machines in detail, and our general catalog of auxiliary equipment, may be had upon application.

FITTINGS AND SUPPLIES—For the convenience of our customers we carry a complete line of Ammonia Valves, Fittings, and Supplies in stock in all of the principal cities. All are of uniform excellence. Our aim is: **The best that it is possible to produce.**

FACILITIES—Practically unlimited. During the past ten years our works have been completely renewed, extended and equipped with the latest and best machinery, tools and appliances, and are used exclusively for the production of Ice-Making and Refrigerating Machinery and Apparatus, of which we are the largest manufacturers in the world.

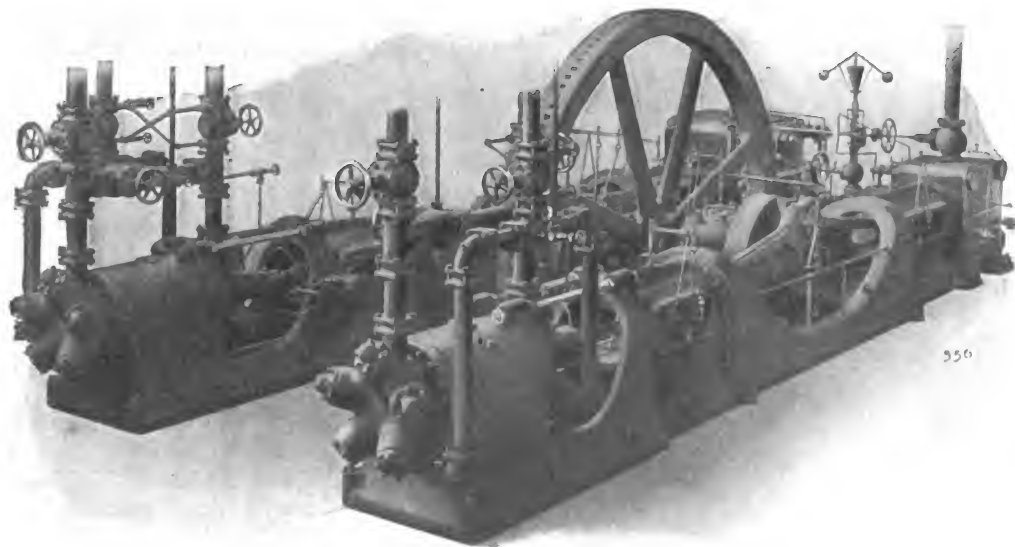
We carry a large number of the smaller sizes of machines in stock, for immediate shipment, at all times.

ESTIMATES—We shall be pleased to furnish estimates on any installations requiring this class of machinery, and are also prepared at all times to send competent and authorized representatives to confer with intending purchasers or their consulting engineers or architects.

In sending requests for prices, kindly state concisely the work to be accomplished and the conditions under which the plant is to be installed and operated.

INSTALLATIONS—In the past fourteen years we have installed over 2900 plants of all sizes, aggregating 118,000 tons of refrigeration per day, which far exceeds the product of any other concern in the business.

REFERENCES—Bulletin 29 contains a complete list of users of our machinery, and we shall be pleased to have you consult the same and visit the plants in your own vicinity.



OUR DUPLEX HORIZONTAL DOUBLE-ACTING MACHINE, 125 TO 500 TONS. BULLETIN 45



OUR STANDARD VERTICAL SINGLE-ACTING MACHINE, 10 TO 500 TONS. BULLETIN 10

"A.B.C." SYSTEMS

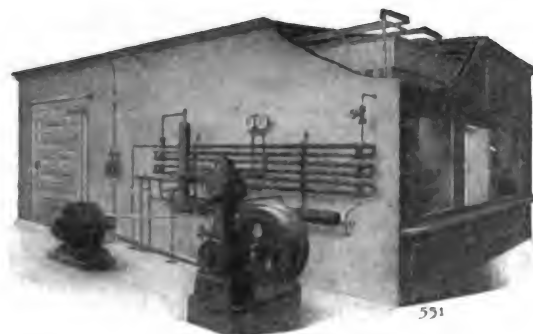
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DOUBLE-CYLINDER ENCLOSED MACHINE,
STEAM-DRIVEN



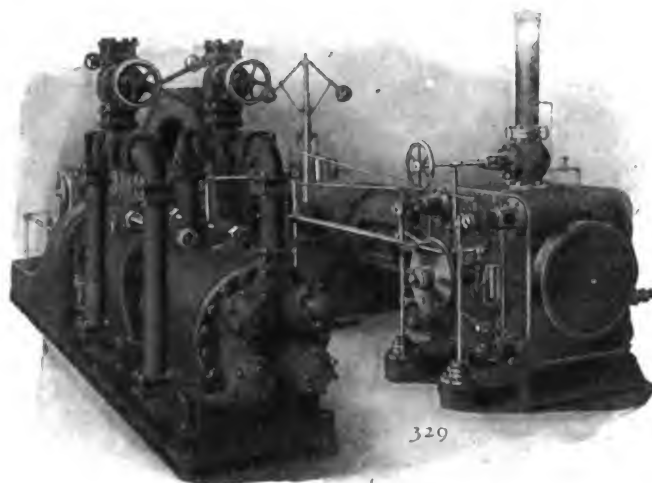
DOUBLE-CYLINDER ENCLOSED MACHINE,
BELT-DRIVEN



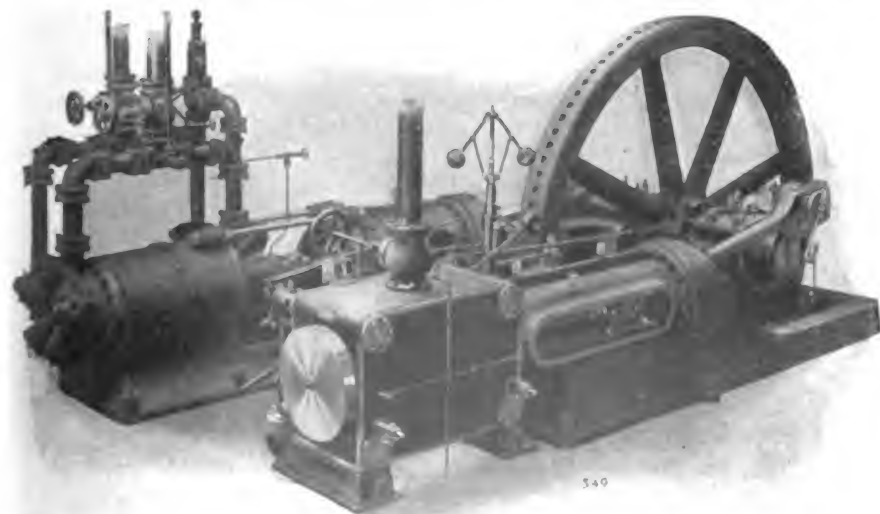
OUR ENCLOSED TYPE SINGLE-ACTING MACHINES.
BULLETIN 42
SINGLE CYLINDERS, $\frac{1}{2}$ TO 6 TONS
DOUBLE CYLINDERS, 8 TO 17 TONS



SINGLE-COLUMN OPEN TYPE SINGLE-ACTING MACHINES, $\frac{1}{4}$ TO 30 TONS. BULLETIN 26

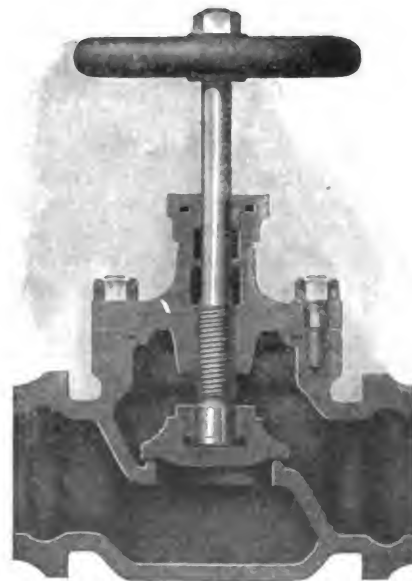


OUR SHORT-STROKE, DOUBLE-ACTING MACHINE, 10 TO 250 TONS.
BULLETIN 15



OUR LONG-STROKE, DOUBLE-ACTING MACHINE, 10 TO 250 TONS. BULLETIN 45.

"A.B.C." SYSTEMS



AMMONIA VALVE, SECTIONAL VIEW

H. W. Johns-Manville Co.

ALBANY
ATLANTA
BALTIMORE
BIRMINGHAM
BOSTON
BUFFALO
CHICAGO
CINCINNATI

CLEVELAND
DALLAS
DETROIT
DULUTH
HOUGHTON
HOUSTON
INDIANAPOLIS
KANSAS CITY

LOS ANGELES
LOUISVILLE
MEMPHIS
MILWAUKEE
MINNEAPOLIS
NEWARK, N. J.
NEW ORLEANS
NEW YORK

OKLAHOMA CITY
OMAHA
PHILADELPHIA
PITTSBURGH
PORTLAND, ORE.
RICHMOND, VA.
ROCHESTER
SAN FRANCISCO

SEATTLE
ST. PAUL
ST. LOUIS
SYRACUSE
TACOMA
WASHINGTON
WILKES-BARRE

ASBESTOS

TRADE MARK

For our Catalog on Building Materials see Section 6C, Cat. 3

For our Catalog on Roofing Materials see Section 26B, Cat. 8

For our Catalog on Pipe and Boiler Coverings see Section 28D, Cat. 2

For our Catalog on Electrical Materials see Section 42, Cat. 6

PRODUCTS—Roofing Materials: J-M ASBESTOS READY ROOFING AND SIDING, J-M BUILT-UP ASBESTOS ROOFING, J-M CORRUGATED ASBESTOS ROOFING, J-M TRANSITE ASBESTOS SHINGLES, J-M REGAL READY ROOFING

Building Materials: J-M SANITOR CLOSET SEATS, J-M TRANSITE ASBESTOS WOOD, J-M VITRIBESTOS SMOKE STACK LINING, J-M VITRIBESTOS VAULT LINING, J-M ASBESTOS STUCCO AND WALL PLASTER, J-M ASBESTOS CLOTH AND VITRIBESTOS THEATER CURTAINS, J-M TRANSITE ASBESTOS WOOD PICTURE MACHINE BOOTHS, J-M ASBESTOS FIRE AND ACID PROOF CHIMNEY CEMENT, KEYSTONE HAIR INSULATOR, J-M ASBESTOS ROLL AND SHEET MILL BOARD, J-M NON-BURN BUILDING PAPER, J-M ASBESTOS SLATERS' FELT, ARCHITECTURAL ACOUSTICS, J-M ASPHALT WATERPROOFING CEMENT, J-M ASPHALT SATURATED FABRIC, J-M WATERPROOFING ASBESTOS FELT, J-M LIQUID WATERPROOF COATING, J-M CONCRETE PRIMER, J-M CUT STONE BACKING, J-M PLASTER BOND, J-M MASTIC

Insulating and Sheathing Materials: J-M HAIR FELT, J-M PURE COMPRESSED CORK SHEETS, J-M IMPREGNATED CORK BOARDS, J-M ROCK WOOL INSULATING BLOCKS, J-M MINERAL WOOL, J-M ASBESTOS FIRE AND DAMP-PROOF FLOORING FELT, AUDIFFREN-SINGRUN REFRIGERATING MACHINES

Pipe and Boiler Coverings: J-M ASBESTOCEL, J-M ASBESTO-SPONGE FELTED, J-M 85% MAGNESIA, J-M ASBESTOS FIRE-FELT, J-M VITRIBESTOS, J-M AIR CELL, J-M ANTI-SWEAT, J-M ZERO, J-M PLUMBING, J-M BRINE AND AMMONIA, J-M SHEETS AND BLOCKS for Boilers, Heaters, etc., J-M ASBESTOS AND MAGNESIA INSULATING CEMENTS, J-M SECTIONAL UNDERGROUND CONDUIT

Electrical Materials: "NOARK" STANDARD FUSE DEVICES, "NOARK" SERVICE BOXES, J-M LINOLITE SYSTEM OF ELECTRIC LIGHTING for Show Windows, Show Cases, Theater Stages, Signs, FRINK REFLECTORS, J-M FIBRE CONDUIT, etc.

AUDIFFREN-SINGRUN REFRIGERATING MACHINE

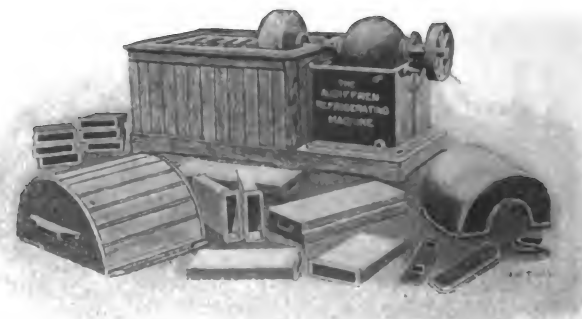
DESCRIPTION—The Audiffren-Singrun is a safe, simple, durable and economical ice-making and refrigerating machine

"A.B.C." SYSTEMS

that can be applied to ice-boxes and refrigerators in butcher and grocery stores, creameries, dairies, cafés, restaurants, hotels and private houses, and also used for cooling drinking water and in place of ice for soda fountains.

It is only necessary to place this machine in its bearings, fill the condenser and refrigerator tanks with water and apply the power, in order to have at will, within a few minutes, cold air, cooled water, or ice.

The Audiffren-Singrun Refrigerating Machine can be easily and safely operated by *any one*. All other types of refrigerating machines require skilled attendance for safe operation. With the Audiffren-Singrun this is entirely superfluous and the expense of an engineer is saved. To start this machine it is only necessary to turn on the power and water, and it stops when they are again turned off.



THE AUDIFFREN-SINGRUN REFRIGERATING MACHINE

This machine is absolutely safe. There are no connections to leak, the pressure is not sufficiently high to cause an explosion, even if the machine be running without condensing water or otherwise maltreated, and, in the event of accident from any external cause, the liberated gas will not produce fatal or even

Continued on next page

dangerous results. At the rates usually charged for electric current for power and with condensing water at 70° F., these machines will furnish refrigeration, or replace ice, at a cost equivalent to ice at 19 cents per 100 pounds, and this without taking into consideration the loss by meltage of the ice before it is actually placed in the refrigerator, which largely increases the cost of ice as a cooling agent.

The temperature in refrigerators cooled with the Audiffren-Singrun machine is lower and the air drier than when cooled by ice. Moreover, there is an absence of the slime that accumulates from even the best ice obtainable.

Any form of power is suitable for operating the Audiffren-Singrun Machine. In tropical countries, where labor is cheap and artificial power seldom available, the smaller machines are often operated by hand, or by a tread mill worked by one or more domestic animals.

The electric motor is the most practical and convenient means of supplying power and is usually preferred where it is available.

The machine can, however, be operated equally well by a gas or gasoline motor, by steam, by an oil or hot-air engine, or by a water wheel or turbine where a fall of water is available, even if small.

It will operate effectively with condensing water as high as 113° F. Another great advantage is its ability to operate with a very small quantity of condensing water by means of a water economizer, hereafter described. With this economizer, 95 to 98 per cent of the condensing water is saved.

A water economizer, for cooling the condenser with a minimum of water—not over 2 per cent of the quantity ordinarily required—can be supplied for use with the Audiffren-Singrun Refrigerating Machine when condensing water is scarce or expensive. With this device the water in the condenser is not changed, but is replenished as it evaporates; the supply being kept up to the determined level automatically. A fan is arranged to operate with a minimum of power, which in extreme cases does not amount to more than 25 per cent of that required for the refrigerating machine itself.

About 1,000 of these machines are in operation in France and a great many of them are also in use in the United States.

These machines have been running in numerous places for from two to five years without any repairs or re-charging with the refrigerant, or any other up-keep expense, and examination of the moving parts after such service has shown no measurable wear. The only attention required is to keep the two self-oiling external bearings properly supplied with the lubricant.

The Audiffren-Singrun Refrigerating Machine is built in the form of a dumb-bell, with a hollow shaft connecting the two bells. As in other machines, a pump (the Compressor) receives and compresses a liquefiable gas (in this case Sulphur Dioxide), and discharges it into the condenser, where liquefaction takes place; the metallic container being cooled by the water in which it is partly immersed. The resulting liquid passes through the hollow shaft into the refrigerator, where it expands again into a gas and is ready for its return to the compressor. The circulation of the volatile liquid continues thus in a closed cycle from the condensing to the refrigerating side and return indefinitely.

"A.B.C." SYSTEMS

One of the most novel features of this machine consists in making the compressor operate in the atmosphere which it compresses, inside of a condenser hermetically sealed.

There are no stuffing boxes, gauges, expansion valves or other apparatus to regulate. As the refrigerating medium is sealed in hermetically it cannot leak away, and never has to be renewed.

The compressor is weighted and is supported in a frame hung loose on the shaft, and consequently does not revolve. It consists of two short oscillating cylinders containing heavy pistons which do not require suction valves or stuffing boxes. It is possible to dispense with these parts—the frequent cause of leaks and stoppages in all other types—because the compressor is within the condenser and therefore the pressure outside the cylinders must always equal or be greater than that within.

One of the trunnions which serve as supports for the compressor has annular openings which are so arranged that they alternately open and close, governing distribution of the gas, and performing the work of the missing valves. The compressor is immersed in an oil bath, chemically pure and neutral, which fills the clearances and perfectly lubricates the moving parts, so that the wear is practically nothing.

Before charging the machine at the factory, the air is entirely exhausted, hence oxidation of the oil is impossible; and its filtration is never necessary because if, in spite of the perfection of construction, there should be some light wear in time, the metallic particles given off would be caught in the traps provided in the compressor frame as a precaution. Not even the fine microscopic dust in the air can enter to cut or wear the working parts.

CAPACITIES, POWER AND SPEED—The following table gives the sizes, capacities, etc., of the various machines:—

	SIZE OF MACHINE			
	No. 2	No. 3	No. 4	No. 6
Cooling Effect (equivalent of ice melted)	16 lbs. per hour	40 lbs. per hour	80 lbs. per hour	160 lbs. per hour
Ice Making Capacity.	11 lbs. per hour	27 lbs. per hour	55 lbs. per hour	110 lbs. per hour
Condensing Water Required at 70° F..	22 gals. per hour	60 gals. per hour	120 gals. per hour	240 gals. per hour
Condensing Water Required, Using Economizer	1 gal. per hour	2 gals. per hour	3 gals. per hour	4 gals. per hour
Power Required by the Machine.....	½-H.P.	1 H.P.	2-H.P.	4 H.P.
Speed of Machine...	380 Rev. Per Min	280 Rev. Per Min	190 Rev. Per Min.	140 Rev. Per Min.

The entire refrigerating effect of the machine can be used for cooling a refrigerator or storage box, to make ice, or to operate a drinking water system. Any combination of these advantages can be arranged to suit special requirements. For example, if ice alone is made, the No. 2 Machine will produce 11 pounds per hour; or any smaller quantity can be made (say, 20 pounds per day) and the excess refrigeration utilized to cool a good sized refrigerator, and incidentally to also cool a supply of drinking water. The machine can be stopped when the desired effect has been produced.

United Refrigerator & Ice Machine Co.

Manufacturers of

Refrigerating, Ice-Making and Water-Cooling Plants Refrigerators, Cold-Storage Construction

KENOSHA, WIS., U. S. A.

AGENCIES OR REPRESENTATIVES IN PRINCIPAL CITIES

PRODUCTS—REFRIGERATING MACHINERY; ICE-MAKING MACHINERY; FREEZING AND REFRIGERATING PLANTS; INSULATION; COLD STORAGE DOORS

REFRIGERATORS for Hotels, Markets, Grocers, Dairies, Apartments, Residences, etc.

BLOCKS for Packing Houses, SECTIONAL TILTING BINS, REFRIGERATOR SHOW CASES AND STORE FIXTURES of all Kinds

WATER COOLING PLANTS

DESCRIPTION—Artificial refrigeration has been so developed and improved in recent years that it is not only practicable but economical and profitable for use wherever refrigeration is required. Every meat market, creamery, candy factory, grocery, hotel, restaurant, greenhouse and ranch should have its own refrigerating plant. The UNITED line includes plants particularly adaptable for these purposes, as well as for requirements of larger scope. We are the successors of the Racine Refrigerator and Ice Machine Co., and our products, under the name of RACINE, are widely known.

Our catalog "C" points out, in a necessarily brief way, some of the principal merits of our plants and a few of the uses for which they are in demand.

ESSENTIAL CONSIDERATIONS—In purchasing a refrigerating plant, or new machinery of any character, two considerations should prevail: First, the record of the system or design of the apparatus in question; second, the grade of the materials used in its construction.

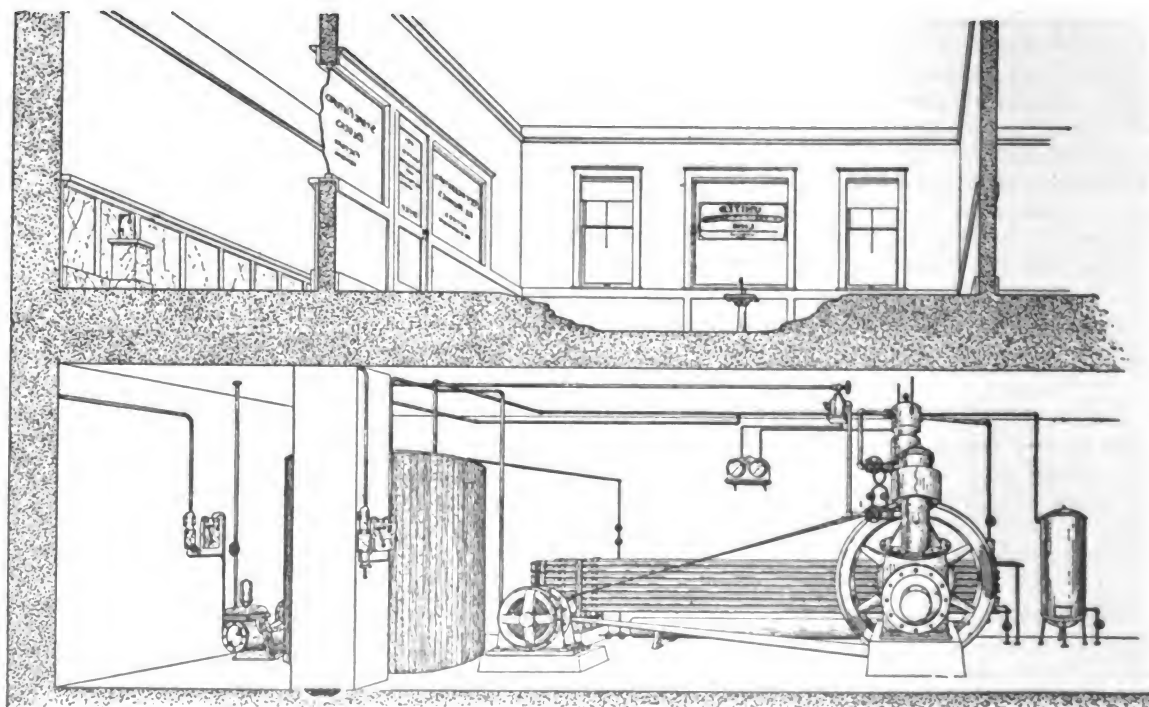
In both respects we claim our products to stand in the front rank. In engineering features our work is unexcelled, and no effort or expense are spared in securing and employing the most skilled labor and high-grade materials for the manufacture of our products.

WATER-COOLING PLANTS—The cooling of drinking water is an important factor in modern buildings. Plants for this purpose are now put in public, apartment and office buildings, hotels, department stores, shops, etc., everywhere. With our refrigerating plants installed in connection with the usual water

system, a plentiful supply of cold water is assured at any and all times. The importance of this improvement in buildings is being rapidly appreciated by architects, owners and the general public.

An installation of a water-cooling plant is **comparatively simple**, and its operation requires very little attention. The compressor can be operated with any power convenient. Where steam boilers are used, the plant can be run at little or no expense either in power or help. Considering the saving in ice and labor effected by these Water-cooling Plants, it is evident that they convey very great benefits at very moderate outlay and running costs.

SERVICE—We contract for the complete or partial equipment of Hotel and Restaurant Kitchens, Department and Grocery Stores, Meat Markets, Municipal Markets, Packing Houses, Produce Houses, Cold Storage Houses; for Ice Making and Pre-cooling Plants; for Water-cooling and Air-cooling Systems, and for Installations for Special Purposes.



SECTIONAL CUT SHOWING INSTALLATION OF WATER-COOLING PLANT

Catalogs of different lines mailed on request.

"United Service" includes promptness, reliability, capacity. Our engineers and designers at your service. **Twenty-five years' experience.**

"A.B.C." SYSTEMS

Monroe Refrigerator Co.

Established 1868

Manufacturers of

The "Monroe" Solid Porcelain Refrigerators

Main Office and Factory

LOCKLAND, CINCINNATI, OHIO

PRODUCTS—"MONROE" SOLID PORCELAIN REFRIGERATORS, built for fine Residences, Apartment Houses, Clubs, Hospitals, Hotels and all Buildings requiring sanitary furnishings

CONSTRUCTION—Our plan of construction is a radical departure from ordinary refrigerator construction. Unchallenged sanitary features—a strong, active circulation of pure, dry, cold air—heavy and efficient insulation, and substantial construction throughout combine to make the "MONROE" the ideal refrigerator. The outer case is made of thoroughly seasoned and kiln-dried white oak, free from useless projections and attached ornaments. All boxes are durably finished in golden oak and trimmed with solid brass, heavily nicked hardware of modern design.

REGULAR SIZES—We carry in stock for immediate shipment twenty different styles covering a wide range of sizes. These are just as carefully made as our "built to order" work. They will meet all ordinary requirements.

BUILT TO ORDER REFRIGERATORS—We are prepared to construct special work from architect's drawings or will submit drawings and estimates to cover individual requirements.



STYLE NO. 21 1/2

Outside Dimensions: 45 1/2 inches wide, 43 3/4 inches high, 23 3/4 inches deep.
Ice Capacity 90 lbs.

"A.E.C." SYSTEMS



FOOD COMPARTMENT

FOOD COMPARTMENTS—A distinctive feature of the "MONROE" is the food compartments—made of snow-white solid porcelain ware, molded in one piece, absolutely without joint or crevice and therefore **Strictly Sanitary**. All corners are rounded and compartments are easily kept clean and sweet. No other refrigerator is made with solid porcelain food compartments, as this and other features are covered by our patents.

OUTSIDE ICING DOORS—Both our stock and special designs may be arranged to ice from the outside. We will be glad to furnish plans showing location and dimensions of rear icing doors, so that arrangements may be made for proper opening in the wall of the building.

SOLD DIRECT FROM FACTORY TO USER—The "MONROE" is not sold in stores, but shipped direct to the user on approval. We pay the freight and guarantee "Full satisfaction or money refunded."

CATALOG AND PRICES—Our complete catalog, showing full line of stock sizes and a few popular special designs with prices and full information, furnished upon request.

Continued on next page

A few of the many Prominent Architects who have specified "Monroe" Solid Porcelain Refrigerators:

Henry Bacon, New York, N. Y.
Davis, McGrath & Kiessling, New York, N. Y.
Hunt & Hunt, New York, N. Y.
Murphy & Dana, New York, N. Y.
E. Necarsulmer, New York, N. Y.
Taylor & Levi, New York, N. Y.
Shepley, Rutan & Coolidge, Chicago, Ill.
Geo. O. Staudahar, Rock Island, Ill.
Geo. A. Fuller, Boston, Mass.
Geo. Hunt Ingraham, Boston, Mass.
Frost, Briggs & Chamberlain, Worcester, Mass.
Baker & Knoll, St. Louis, Mo.
Smith & Bassette, Hartford, Conn.
Hornblower & Marshall, Washington, D. C.
Wood, Donn & Deming, Washington, D. C.
McDonald & Dodd, Louisville, Ky.
Samuel Hannaford & Sons, Cincinnati, Ohio
J. Milton Dyer, Cleveland, Ohio
Wilson Eyre, Philadelphia, Pa.
M. Nirdlinger, Pittsburgh, Pa.

A few Homes of Prominent People where "Monroe" Refrigerators are used:

Geo. J. Gould, New York, N. Y.
C. L. Tiffany, New York, N. Y.
Ernest Green, New York, N. Y.
Wm. M. Stillman, New York, N. Y.
W. E. D. Stokes, New York, N. Y.
Mrs. C. P. Huntington, New York, N. Y.
Mrs. Howard Gould, New York, N. Y.
Howard M. Smith, Brooklyn, N. Y.
Jas. K. Duff, Pittsburgh, Pa.
Thos. Doliber, Boston, Mass.
R. W. Bird, Boston, Mass.
Julien W. Vose, Boston, Mass.
Richard G. Badger, Brookline, Mass.
Hon. J. H. Farley, Cleveland, Ohio
R. T. Crane, Jr., Chicago, Ill.
Frank R. Rice, St. Louis, Mo.
D. M. Boyd, St. Louis, Mo.
John D. Spreckels, Coronado, Cal.
Wm. R. Nash, Pasadena, Cal.

Hospitals, Apartments and Institutions using "Monroe" Refrigerators:

Bellevue & Allied, New York, N. Y.
St. Luke's Hospital, New York, N. Y.
Apthorpe Apartments, New York, N. Y.
Massachusetts General Hospital, Boston, Mass.
Newhall Apartments, Brookline, Mass.
Memorial Hospital of Harvard College, Cambridge, Mass.
Longview Hospital, Cincinnati, Ohio
Jewish Orphan Hospital, Cleveland, Ohio
St. Luke's Hospital, Chicago, Ill.
The Connecticut Apartments, Washington, D. C.
Johns Hopkins Hospital, Baltimore, Md.
U. S. Naval Academy, Annapolis, Md.
California Women's Hospital, San Francisco, Cal.
Good Samaritan Hospital, Los Angeles, Cal.
Mt. De Sales Academy, Macon, Ga.

"A.E.C." SYSTEMS



STYLE NO. 30

Outside Dimensions: 47 $\frac{1}{4}$ inches wide, 56 $\frac{3}{4}$ inches high, 24 $\frac{1}{4}$ inches deep
Ice Capacity 175 lbs.



STYLE NO. 100

Outside Dimensions: 67 $\frac{1}{4}$ inches wide, 65 $\frac{3}{4}$ inches high, 24 $\frac{1}{4}$ inches deep
Ice Capacity about 220 lbs.

Special Design built to order only

Can be made with no top molding, and the corners neatly rounded off, reducing width 2 inches and depth 1 inch.

CLASSIFICATION PAGE OF
SECTION 33

Passenger and Freight Elevators, Escalators, Dumbwaiters, Overhead Interior Conveyors, Chutes, Mechanical Apparatus

(Cars, Doors, Enclosures see also Section 15)
(Patent Protective Doors and Gates see Section 17)
(Heavy Conveyors see Sections 3 and 28)

Section Synopsis

A. POWER PASSENGER AND FREIGHT ELEVATORS, steam gas-machine, hydraulic-cylinder, steam-hydraulic, pneumatic, plunger-type and electric; Hand Passenger and Freight Machines; Invalid Lifts; Carriage and Automobile Lifts; Cars, Doors, Platforms, Equipment Details; Elevator Pumps; Hemp Rope; Hydraulic Accumulators; Air-Cushion Safety

B. ESCALATORS, Inclined Elevators, Moving Stairways, for passengers and freight; Inclined Railways

DUMBWAITERS, all standard makes; Revolving; Brass-

tube Restaurant; Trunk Lifts; Ash Hoists; Kitchen Elevators; Book Lifts; Wood Cars; Steel Cars

C. Interior Conveyors, for stores, warehouses, factories, machine shops, barns, etc.; Tray and Bucket Elevators; Industrial Tramways and Telferage Systems; Stationary Sliding Ladders; Electric and Pneumatic-tube Cash and Parcel Systems, etc.; Parcel, Package and Merchandise Chutes; Turnstiles; Industrial Cars; Platform and Store Scales, etc.

D. Sundry Mechanical Apparatus and Equipment

Classification of Products, Subscribers Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX REGULAR CLASSIFICATION	
A	Passenger and freight elevators as follows:—
	1 Electric, gear-type, traction
	2 Gas machine
	3 Hand-power
	4 Hydraulic, vertical, horizontal machines
	5 Plunger-type, hydraulic
	6 Pneumatic
	7 Push-button, electric
	8 Steam, direct, belt-drive
	9 Steam hydraulic, freight
	10 Air-cushion safety device
	11 Carriage and automobile lifts
	12 Cars, platforms, doors
	13 Differential-grip attachments
	14 Elevator pumps, special machines
	15 Hemp rope, for lifting
	16 Hoists, hand, power, all kinds
	17 Hydraulic accumulators
	18 Invalid lifts
	19 Sidewalk lifts
	20 Wire cable, for lifting
B	32 Ash hoists
	Dumbwaiters:—
	33 Book lifts
	34 Brass-tube
	35 Electric
	36 Pneumatic
	37 Push-button, electric
	38 Revolving
	39 Standard, hand-power
	40 Steel car
	41 Kitchen elevators
	Passenger and freight:—
	42 Escalators
	43 Inclined elevators, passenger, freight
	44 Inclined railways
	45 Moving stairways
	46 Trunk lifts

C	60	Conveyors, interior, special-gravity, belt, all powers and uses
	61	Chutes, ashes, garbage, package, coal, ice, etc.
	62	Elevator buckets
	63	Industrial tramways, interior, cars, trucks, etc.
	64	Industrial telferage systems
	Overhead interior conveyors:—	
	65	Cash and parcels, electric, pneumatic
	66	Material, merchandise, hay, electric, pneumatic, trolley mechanism
	67	Store scales
	68	Store sliding ladders
D	69	Tray and bucket elevators, all materials
	70	Turnstiles
	71	Weighing scales, platforms, all uses
	81	Shavings exhaust system
	SPECIAL CLASSIFICATION	
	Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
	89	Heavy material outside conveyors, construction (S. 3)
	90	Material elevators, hod hoists, etc. (S. 3)
	91	Power transmission, gears, pulleys, shafting, belting, etc. (S. 28 B)
	92	Special elevator safety doors and gates (S. 17 A)
	93	Special hoist well-hole safety doors and gates, automatic (S. 17 A)
	94	Yard tramways, locomotives, cars, etc. (S. 3)

TRADE NAMES AND BRANDS								
"Cross," elevator and freight house doors		S. 17 A, Catalog 3						
"Cross," improved Meaker elevator doors		Catalog A 1						
"Humphrey," hand elevator		Catalog A 1						
"Manhattan," dumbwaiter		Catalog A 1						
"National," dumbwaiter		Catalog A 1						
"Newark," dumbwaiter		Catalog A 1						
"New York Safety," dumbwaiter		Catalog A 1						
"Paragon," dumbwaiter		Catalog A 1						
"Krause Patent," for operating and locking elevator doors, S. 17 A, Catalog 1		Catalog A 1						
"Weller-made," material conveyors, Catalog C 1		Catalog A 1						

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 22	23 to 44	45 to 66	67 to 88	89 to 100
A 4	Cohoes Iron Foundry & Machine Co. Cohoes, N. Y.	1	32	46		92
		3	35			93
		7	39			
		10				
		11				
		12				
		16				
		18				
		19				
		20				
B 2	Murtaugh Company, Jas. New York, N. Y.	3	32	46		
		11	35			
		12	37			
		13	39			
		15	40			
		16				
		18				
		19				
		20				

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.				Manufacturers without Catalog data	Sub-Index Numbers				
		1 to 22	23 to 44	45 to 66	67 to 88	89 to 100						1 to 22	23 to 44	45 to 66	67 to 88	89 to 100
B 1	Otis Elevator Co. New York, N. Y.	1 3 4 5 7 8 9 11 12 13 14 15 16 17 18 19 20	32 35 37 39 42 43 44	45 46 60		90 92 93					A. B. See Electric Elevator Co. New York, N. Y.	1	35			
							Boston Art Metal Co. S. 17 A, Cat. 1 ("Krause" elevator mechanism)				Acme Cash Railway..... New Haven, Conn.			65		
											Adt. John B..... Baltimore, Md.	1 3 5 8 11 19	32 39			
											Albro-Clem Elevator Co.... Philadelphia, Pa.	1 2 3 10 11 12 18 19 20	32 35	46		
											Alvey-Ferguson Co..... Oakley, Cincinnati, Ohio		32 42 43	46 61 64		89
											American Kron Scale Co.... New York, N. Y.				70	
											American Machine Co..... Louisville, Ky.	1 3 4 8				
A 3	Reedy Co., The H. J. Cincinnati, Ohio	1 2 3 4 5 7 8 11 12 13 14 15 16 17 18 19 20	32 35 37 39			92 93	Dahlstrom Metallic Door Co. S. 16 D, Cat. 1 (Elevator cars and doors)				American Machinery & Construction Co. Milwaukee, Wis.		32			
											American Metal Stamping Co. Germantown, Pa.			61	70	
											Baker Iron Works..... Los Angeles, Cal.	1 3 5 11 12 20	39			
							Federal Steel Fixture Co. S. 40 A, Cat. 1 (Store sliding ladders)				Baldwin & Co., James L. Chicago, Ill.			65		
											Bates' Son, James..... Baltimore, Md.	3 8 11 18 19	32 39	46		
											Beckwith Elevator Co.... Boston, Mass.	3 5 18 19	32 33 34 36 41	46		92
A 2	Sedgwick Machine Works New York, N. Y.	3 11 12 13 15 16 18 19	32 33 34 39				Mannen & Esterly Co., The S. 36 B, Cat. 1 (Shavings exhaust system)				Bergquist, Jacobson & Co. Brooklyn, N. Y.	3 12 18 19	33 34 39 41	46		
											Bicycle Step Ladder Co., Chicago, Ill.				71	
							Puritan Cordage Mills S. 19 A, Cat. 2 (Hemp rope)				Bilt Rite Co. Minneapolis, Minn.			65		
											Brewer & Co., Elias... Boston, Mass.	1 3 4 5 8 9 11 12 14 15 18 19 20	32 33 34 35 39 41 43	46		90 93
A 1	Storm Manufacturing Co., The Newark, N. J.	1 3 11 12 13 15 16 18 19	32 33 34 39				Samson Cordage Works S. 19 A, Cat. 1 (Hemp rope)				Buffalo Scale Co..... Buffalo, N. Y.				67	
											Burdett-Rowntree Mfg Co Chicago, Ill.	1	35			
											Burwak Elevator Co., New York, N. Y.	1 3 11 12 15 18 19 20	32 33 34 35 36 41 43	46		
C 1	Weller Manufacturing Co. Chicago, Ill.			60 61 62 66	69 89 90	91	Standard Co., The S. 17 A, Cat. 2 (Hemp elevator cars and doors)				California Car and Elevator Works San Francisco, Cal.	1 3 4 12				
							Variety Mfg. Co., S. 12 A, Cat. 3 (Hemp elevator cars and doors)				Calumet Engineering Works Harvey, Ill.			66		
											Chain Belt Co. Milwaukee, Wis.		32 43 45	61		89 90
											Chickasaw Iron Works, Memphis, Tenn.			61		89

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 22	23 to 44	45 to 66	67 to 88	89 to 100		1 to 22	23 to 44	45 to 66	67 to 88	89 to 100		1 to 22	23 to 44	45 to 66	67 to 88	89 to 100
Cincinnati Elevator Works.. Cincinnati, Ohio	1 3 4 5 8 11 12 15 18 19 20	32 33 35 36 41	46		92	Green Elevator Co..... Wilmington, Del.	1 2 3 8 10 11 12 15 18 19 20	32 33 39 41 43	46			Kaestner & Hecht Co..... Chicago, Ill.	1 3 4 5 8 14 15 19 20	32 33 34 35 41 42 43	45 46		
Clyde Iron Works..... Duluth, Minn.	8					Grote Mfg. Co., F..... Evansville, Ind.	1 3 5 8 11 12 17 20			90		Kieckhefer Elevator Co., A. Milwaukee, Wis.	1 3 4 5 8 9 11 12 17 18 19	32 35 36 41	46		90
Coburn Trolley Track Mfg. Co. Holyoke, Mass.			63 64 65 66	67 68 71	89 94												
Cole, Geo. W..... New York, N. Y.	12				92 93	Gurney Electric Elevator Co. Honesdale, Pa.	1 18 19	35				Kimball Bros. Co..... Council Bluffs, Iowa	1 3 11 12 17 18 19	32 33 35 39 41	46		92 93
Conveying Machinery Co.... New York, N. Y.		32 43	61 63 64 66	70	89 90 94	Gurney Elevator Co..... New York, N. Y.	1	35									
Curtis & Co., Mfg. Co..... St. Louis, Mo.	6 9 10 20	32 36				Haiss Mfg. Co., Inc., George New York, N. Y.			61 63 64 66		90	Lagerquist, Gust..... Minneapolis, Minn.	3 5 11 12 19	32 33 35 39 41	46		92 93
Dodge Co., J. M..... Philadelphia, Pa.			64			Haughton Elevator & Ma- chine Co. Toledo, Ohio	1 3 5 8 11 18 19	35				Lamson Consolidated Store Service Co. Boston, Mass.		33 34 35 36 38 39 41	65 66		
Dowdall, Charles E., Inc..... New York, N. Y.	19					Heller, S..... Milwaukee, Wis.	1 3 5 8 11 18 19	32 33 34 35 39 41			92	Lane Bros. Co..... Poughkeepsie, N. Y.			65 66	71	
Eastern Machinery Co..... New Haven, Conn.	1 11 12											Larsen & Son, Anton..... New York, N. Y.		39 41			
Economy Engineering Co.... Chicago, Ill.	19	32				Helmick Foundry Machine Co., Fairmont, W. Va.	1 3 5 8 11 14 19		41 61 63		89 90 92 93 94	Letteney & Howes..... Boston, Mass.	3 4 11 12 18 19	32 33 39 41	46		
Edmonds Elevator Co..... Philadelphia, Pa.	1 3 4 5 8 11 19	35 36 39			92 93	Hoffman Co., Charles W..... New York, N. Y.	1 3 4 8 9					Link Belt Co..... Chicago, Ill.			61 66		
Elevator Construction Co.... Pittsburgh, Pa.	1 2 3 4 5 11 12 14 18 19 20	32 33 35 39 42 45	46			Hofmeyer, Geo. A..... New York, N. Y.			61			Llewellyn Iron Works.... Los Angeles, Cal.	1 3 4 5 6 11 12 14 18 19 20	32 33 34 35 36 38 39 41	46		90 92 93
Embree Co., W. F..... Lynn, Mass.	1 8 11 12	35 39				Hollister-Whitney Co..... Quincy, Ill.	1 3 4 5 11 19	32 33 35 39				Lowerator Co..... Brooklyn, N. Y.			62		
Energy Elevator Co..... Philadelphia, Pa.	11 12 15 18 19 20	32 33 34 39 41				Houser Elevator Co..... Syracuse, N. Y.	1 3 4 5 8 9 10 11 12 14 15 17 18 19 20	32 33 34 35 36 38 41	46		92 93	McKenna Bros. Brass Co.... Pittsburgh, Pa.	3 3 4 5 6 11 12 14 18 19 20	34 39 41			
Fairbanks Co..... New York, N. Y.				71								McLauthlin Co., Geo. T..... Boston, Mass.	3 11 12 18 19 20	32 33 34 35 39 41	46 61 66		92 93
Fox Elevator Co., William... Detroit, Mich.	1 3 12 18 19	32 33 35 39 41			92	Howe Scale Co..... New York, N. Y.			67 71			Majestic Furnace & Foundry Co. Huntington, Ind.			61		
Franklin Machine Works... St. Paul, Minn.	3 8 11 19	35 39	46		93	Hunt Co., C. W..... West New Brighton, N. Y.			61 63 66		94	Maris Brothers..... Philadelphia, Pa.			66		
Prevert Machinery Co..... New York, N. Y.		39										Marshall Brothers..... Pittsburgh, Pa.	1 2 3 4 5 6 8 9 11 12 14 15 17 18 19 20	32 33 34 35 36 39 41 43	46		
Gillis and Gogheyan..... New York, N. Y.		32				Imperial Kitchen Elevator Works Canton, Pa.		41									
Gifford Wood Co..... Hudson, N. Y.		42 43	45 61 66		89	Imperial Mfg. Co..... Williamsport, Pa.		41									
Globe Machinery & Supply Co. Des Moines, Iowa	1 3 4 5 11 14 15 19 20				89 90	Jeffrey Mfg. Co..... Columbus, Ohio									33 34 39		

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					
	1 to 22	23 to 44	45 to 66	67 to 88	89 to 100		1 to 22	23 to 44	45 to 66	67 to 88	89 to 100		1 to 22	23 to 44	45 to 66	67 to 88	89 to 100	
Mathews Gravity Carrier Co. St. Paul, Minn.		43	61 65			Putnam & Co..... New York, N. Y.			63	71		Standard Safety Air Cushion Co. New York, N. Y.	10				92	
Mesker & Co., Geo. L..... Evansville, Ind.	3 11 19 20	39 41				Quincy-Manchester-Sargent Co. Plainfield, N. J.	6	32 36				Steel Cable Engineering Co.. Boston, Mass.		32	61			
Milbradt Mfg. Co..... St. Louis, Mo.				70		Randall Tramrail Co..... Philadelphia, Pa.			63			Stephens-Adamson Mfg. Co.. Aurora, Ill.		32	65 66			
Miller Elevator Mfg. Co.. Wm. A. St. Louis, Mo.	3 8 11 19	35 39 42 43	46			Reading Crane & Hoist Works Reading, Pa.			63	90		Strait Mfg. Co., H. N..... Kansas City, Kans.	1 2 3 4 5 6 8 9			67		
Moffatt Machinery Mfg. Co.. Charlotte, N. C.	3 4 5 8 11 12 14 17 18 19 20	32 33 34 35 38 39 41 43	46 61 66		90 92 93	Richards-Wilcox Mfg. Co.... Aurora, Ill.			66	71		Sturgis Machine & Tool Works, S. D. Los Angeles, Cal.	1 3	35 39 41				
Montgomery, G. S..... Kansas City, Mo.	1 4 5 11 12 20	35 39				Ridgway & Son Co., Craig... Coatesville, Pa.	4 5 6 9 10 11 12 17 18 19 20	32 33 34 36 41			92 93	Troops, E. D..... Indianapolis, Ind.		41		92 93		
New Jersey Foundry & Ma chine Co. New York, N. Y.	20		60 62 63 66	69		Roberts Elevator Co., James H. New York, N. Y.	1 2 3 8 11 15 18 19 20	32 33 34 35 39 40 41 43	46			Union Iron Works..... Hoboken, N. J.	14	32	61 63	89 94		
Nock & Garside..... Denver, Colo.	1 4 6 11 19 20	35 39	46			Robins Conveying Belt Co... New York, N. Y.		32 42 43	46 61 63 66		89 90	Universal Pneumatic Trans- mission Co. Chicago, Ill.			65			
Norwood Engineering Co.. Florence, Mass.	8					Rodgers & Co., R. M..... Brooklyn, N. Y.	3 11 18 19	32 33 34 35 39 41	46			Van Dorn Iron Works Co.... Cleveland, Ohio	12 19		61 69	89		
Ohio Elevator & Machine Co Columbus, Ohio	1 3 4 11 12 19 20	35 39				Roots Co., P. H. & F. M..... Connersville, Ind.			65			Van Emon Elevator Co..... San Francisco, Cal.	1 3 4 5 6 8 11 12 14 15 17 18 19 20	32 33 35 36 39 41 43	46	90 92 93		
Pacific Iron Works..... Spokane, Wash.	1 3 5 11 12 19	39				Rosenberg Elevator Co., F... Milwaukee, Wis.	1 3 5 8 11 18 19 20	32 33 35 39	46		92	Warsaw Elevator Co..... Warsaw, N. Y.	1 3 4 5 11 12 18 19	32 33 34 35 39 41	46	92 93		
Park Mfg. Co..... Charlotte, N. C.	1 3 8 11 12 18 19 20	39 41	46		92	Rover, A. B..... Binghamton, N. Y.	1 5 19					Washington Elevator Co.... Seattle, Wash.	1 3 5 11 12 18 19	35 39 41		92		
Parks Aetna Elevator Co H. J. New York, N. Y.	1 2 3 8 11 12 18 19 20	32 39			92	Salem Elevator Works..... Salem, Mass.	1 3 9					Webster Mfg. Co..... Chicago, Ill.		43 45				
Parlette, H. Leslie..... Media, Pa.			61			Schultz & Sons, A. L..... Chicago, Ill.			61 66	89 94		Welsh Machine Works..... New York, N. Y.	1 2 3 5 11 12 18 19 20	32 33 34 35 39 41 42 43	45 46 63 66			
Payne Co., F. S..... Cambridge, Mass.	1 3 4 11 18 19	12 14 19				Seelye Mfg. Co..... Boston, Mass.	2 3 4 6 8 9					Westbrook Elevator Co..... Danville, Va.	1 3 8 10 11 12 15 18 19 20	32 33 35 39 41 43	46	92 93		
Perry, Wm. J..... Boston, Mass.	1 11 12 18 19	15 19	36			Shepard Electric Crane & Hoist Co. Montour Falls, N. Y.			64	89		Williams & Co., Wm. J.. New York, N. Y.	3 15 19	32 33 39	46			
Philadelphia Tramrail Co.. Philadelphia, Pa.						Sidney Elevator Mfg. Co., J.. Sidney, Ohio	3 18 19	39 41				Wetherill & Co., Robert.... Chester, Pa.	5					
Portland Co. Portland, Me.						Skinner & Leary..... Newark, N. J.	1 4 8					Whiting Foundry Equip ment Co. Harvey, Ill.	4 6 10 12	32 35 36	61 63	89 94		
						Slusser McLean Scraper Co.. Cincinnati, Ohio	3					Williams & Co., Wm. J.. New York, N. Y.	3 15 19	32 33 39	46			
						Smith Elevator Co., C. W.... Burling, N. Y.	1											
						Smithville John..... New York, N. Y.	1 11											
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
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						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
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						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								
						St. Louis, Mo.	3 11 14 18 19	32 33 34 36	6	92 93								

The Storm Manufacturing Co.

Elevators and Dumb-Waiters, Hand, Belt and Electric Power

40 to 50 VESEY STREET

NEW YORK NEW HAVEN

NEWARK, N. J.

SAN FRANCISCO

LONDON

PRODUCTS—N. Y. SAFETY, NEWARK, PARAGON, MANHATTAN, AND NATIONAL DUMB-WAITERS; PARAGON AND IMPROVED HUMPHREY HAND-POWER ELEVATORS FOR INVALID AND TRUNK LIFTS; CARRIAGE AND WAREHOUSE ELEVATORS; BASEMENT OR SIDEWALK ELEVATORS; ASH HOISTS; DIFFERENTIAL GRIP HOIST

INTRODUCTORY—The "Storm" Dumb-Waiters and Elevators are the result of over twenty years' practical experience and of a progressive policy as to methods of manufacture and business, combined with courteous treatment and fair dealing.

The special attention which we have given to the following points has given our machines popularity throughout the world: Simplicity of mechanism, ease with which they can be installed and operated, strength and durability, good finish and constant care that the materials and workmanship shall be of the highest quality and the design and construction mechanically correct.

Our machines are conservatively rated. We will be pleased to furnish estimates for complete installation in any part of the world, or we will sell fixtures only, or machines complete and furnish directions for erecting. We "build to fit the place" and carry no stock sizes of cars.

NEW YORK SAFETY DUMB-WAITER—A standard and well-known dumb-waiter of first-class construction.

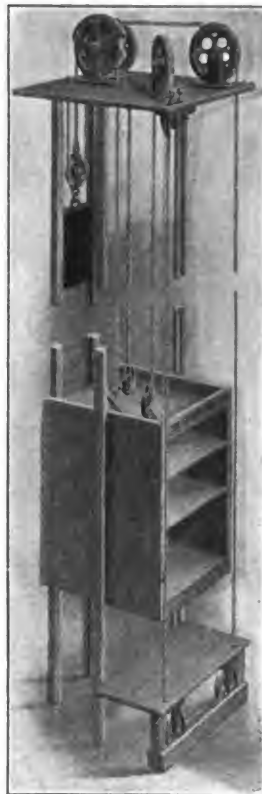
DETAILS—Fixtures of one size only. For well holes under 24 inches square. Always use flat counterweights, run in guides or box.
Price of fixtures with No. 1 car, counterweight, guide runs, weight runs and all ropes for first 10 feet of travel.....\$80.00
For each additional foot in height......60
Fixtures only furnished if desired. Prices on inquiry.

NEWARK DUMB-WAITER (Double-face) — Strong, well made, durable, of simple construction and easy to operate.

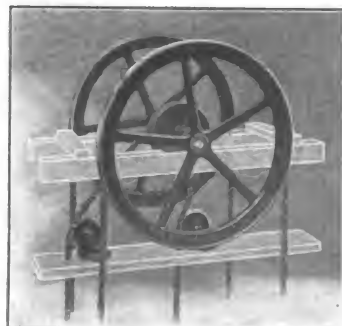
DETAILS—For wells under 32 inches square. Fitted with grip clutch to hold car at each floor; but, if desired, can be furnished equipped with band brake. Weight at either right- or left-hand side or back.

NEWARK DUMB-WAITER (Single-face)—A slightly cheaper machine than the double-faced and of equally good manufacture.

"A.E.C." SYSTEMS



NEW YORK SAFETY DUMB-WAITER



NEWARK DUMB-WAITER DOUBLE-FACE

PRICE LIST NEWARK DUMB-WAITERS

	No.	Capacity	Well	Wheel	Shaft	Single-face	Double-face
*Machine complete for first 10 feet of travel	11	50 lbs.	20x20 in.	16 in.	16 in.	\$45.00	\$55.00
	12	100 lbs.	27x27 in.	20 or 24 in.	19 in.	55.00	67.00
	13	150 lbs.	32x32 in.	30 in.	24 in.	65.00	80.00
Each additional foot of travel	..	.....	.....	.....	..	.70	.85

Band Brake \$10.00 extra

Prices for larger sizes on application

*Includes No. 1 car, counterweight, guide runs, weight runs and all ropes ready for erection. Fixtures only furnished, if desired. Prices on inquiry.

PARAGON AUTOMATIC DUMB-WAITER—So constructed that it will hold the car stationary at any point without the use of a brake or rope clamp.

DETAILS—Nos. 1, 2 and 3 are sheave machines, with weight at right or as otherwise ordered.
No. 4 is similar to No. 1, of same capacity, but with chain lift instead of rope.

PRICE LIST PARAGON DUMB-WAITERS

	No.	Capacity	Well	Wheel	Shaft	Single-face	Double-face
*Machine complete for first 10 feet of travel	1	150 lbs.	32x32 in.	30 in.	24 in.	\$105.00	\$115.00
	2	100 lbs.	27x27 in.	20 or 24 in.	19 in.	85.00	95.00
	3	50 lbs.	20x20 in.	16 in.	16 in.	77.00	85.00
	4	150 lbs.	32x32 in.	30 in.	24 in.	110.00	120.00
Each additional foot of travel	1	.....	.....	.....	..	.75	.90
	2	.....	.....	.....	..	.70	.85
	3	.....	.....	.....	..	.70	.85
	4	.....	.....	.....	..	.80	1.00

*Includes No. 1 or 2 car, counterweight, guide runs, weight runs and all ropes ready for erection. Fixtures only furnished, if desired. Prices on inquiry.

PARAGON AUTOMATIC HAND ELEVATOR—Has lock similar to Paragon Automatic Dumb-Waiter, but with gears arranged for lifting heavy loads.

DETAILS—Nos. 5, 6 and 8 are geared machines, with weight at left, or as otherwise ordered. Lifting cable of wire.

PRICE LIST PARAGON HAND ELEVATORS

	No.	Capacity	Well	Wheel	Shaft	Single-face	Double-face
*Machine complete for first 10 feet of travel	5	225 lbs.	36x36 in.	30 or 34 in.	30 in.	\$120.00	\$130.00
	6	300 lbs.	42x42 in.	34 or 36 in.	34 in.	125.00	140.00
	8	500 lbs.	54x54 in.	36 in.	40 in.	160.00	180.00
Each additional foot of travel	5	.....	.....	.....	..	.90	1.10
	6	.....	.....	.....	..	.90	1.10
	8	.....	.....	.....	..	1.00	1.25

*Includes No. 2 or 3 car, counterweight, guide runs, weight runs and all ropes and cables ready for erection. Fixtures only furnished, if desired. Prices on inquiry.

MANHATTAN DUMB-WAITER—Equipped with band brake positively controlling load at any point either in hoisting or lowering.

DETAILS—For wells under 36 inches square, and for buildings of any height. Counterweight at either right, left or back. Also made double-faced, so that it can be operated from either side on any floor.

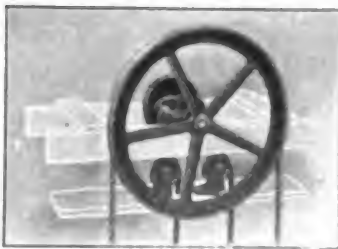
PRICE LIST MANHATTAN DUMB-WAITERS

	No.	Capacity	Well	Wheel	Single-face	Double-face
*Machine complete for first 10 feet of travel	..	200 lbs.	36x36 in.	20, 24 or 30 in.	\$120.00	\$130.00
Each additional foot of travel90	1.10

Price of bevel gear machine same as double-face.

*Includes No. 2 car, counterweight, guide runs, weight runs and all ropes ready for erection. Fixtures only furnished, if desired. Prices on inquiry.

Continued on next page



PARAGON AUTOMATIC DUMB-WAITER

IMPROVED HUMPHREY HAND ELEVATOR—In three sizes, for lifting 500, 750 and 1000 pounds respectively. For use for store and factory work, hospitals and public buildings, trunk and invalid lifts and can also be used as dumb-waiter.



IMPROVED HUMPHREY HAND ELEVATOR

DETAILS—For wells from 2½ to 5½ feet square and buildings of any height. Counterweight at right or left as ordered.

PRICE LIST IMPROVED HUMPHREY HAND ELEVATORS

	No	Capacity	Well	Wheel	Single-face	Double-face
*Machine complete for first 10 feet of travel	1	500 lbs.	54x54 in.	30 or 36 in.	\$100.00	....
	2	750 lbs.	60x60 in.	42 or 48 in.	150.00	....
	3	1200 lbs.	66x66 in.	48 or 60 in.	200.00	....
Each additional foot of travel	1	.....	.....	.....	1.00	....
	2	.....	.....	.....	1.00	....
	3	.....	.....	.....	1.50	....

Bevel Gear \$15.00 extra
No. 5 Car \$30.00 extra

*Includes No. 3 car, counterweight, guide runs, weight runs and all ropes and cables ready for erection. Fixtures only furnished, if desired. Prices on inquiry.

OUR SPECIAL INVALID LIFT—Complete, safe and easy working.

DETAILS—Car of hardwood, handsomely panelled and finished with brass grille work. Machinery, "Improved Humphrey Hand Elevator" No. 2. Equipped with two cables or with safety attachment, or with both.

We furnish directions for erecting, or will quote prices erected in any part of the country.

Price for everything complete, ready to erect, with safety attachment or double cable, for first ten feet of travel.....\$400.00
For each additional foot of travel..... 1.50

HAND-POWER ELEVATOR NO. 40
—Capacity of from 1500 to 6000 pounds.

DETAILS—Construction similar to improved Humphrey Hand Elevator and built of the best material. Can be furnished with iron frame and steel construction. Prices quoted for overhead machines only, or for everything complete, including car with safety attachment, guide runs, weight runs and all ropes and cables.

LIGHT WEIGHT MACHINES—We also make a complete line of very light dumb-waiters for papers and light articles not exceeding 15 or 20 pounds in weight. Made either of wood or brass throughout as may be desired.

BRASS OR IRON MACHINES—Any of our Dumb-Waiters or Elevators can be furnished in part or entirely of brass, with brass cars of original and neat design, or with iron cars and iron guide track, making an entirely fireproof equipment. We also furnish pneumatic dumb-waiter checks when desired.

"A.B.C." SYSTEMS

CARRIAGE AND AUTOMOBILE ELEVATOR—Capacities from 1000 to 6000 pounds. For raising or lowering automobiles, carriages, wagons, etc., in stables, garages and carriage factories, or for warehouses for lifting heavy or bulky goods.

DETAILS—Platform flat with no cross-beams overhead. Made to any size. Hung by four wire cables winding on grooved drums. Machinery controlled by anti-friction brake, operated by single brake cord. Machine furnished alone, with all ropes, cables and counterweight, or erected complete in working order in any part of the country.

Prices on application.

ASH HOIST—Capacity 800 pounds
—Price \$240.00.

DETAILS—For light elevator work. Simpler in construction, quicker in operation, and taking much less time to erect than regular sidewalk machine.

BASEMENT OR SIDEWALK ELEVATOR—Capacity 1000 to 2000 pounds.

DETAILS—Heavily constructed. Equipped with one or two cranks, which do not revolve when lowering, the machine being entirely controlled by brake. All parts iron except top of platform.

No. 60—Price for everything complete, ready to erect, for first 10 feet of travel, platform not over 4 feet square, \$290.00.

No. 61—Price for everything complete, ready to erect, for first 10 feet of travel, platform not over 5 feet square, \$340.00.

SPECIAL SAFETY ATTACHMENT—This attachment will positively prevent the car from falling, should the lift rope break. It is suitable for use with any style of car and machine of any size up to and including the No. 2 Improved Humphrey.

DUMB-WAITER CARS—We build these of many different styles and generally either of chestnut or ash, but material and size may be as desired.

FREIGHT, INVALID AND HOSPITAL CARS—Furnished in various designs, fitted with "Improved Spring Grip Safety Attachment."

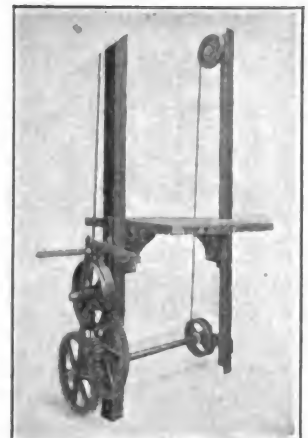
SPECIFICATIONS — To Architects — When drawing plans and specifying Dumb-Waiters, it is well for architects to observe the following points:

State the style of the machine and car, and the maximum load which the dumb-waiter or elevator is intended to carry.

Give the exact size in the clear of the FINISHED hatchway or shaft.

State how shaft is enclosed.

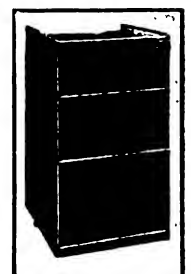
State where the openings are to be on each floor. When openings are to be on opposite sides, fixtures adapted to this purpose are required.



ASH HOIST



SPECIAL SAFETY ATTACHMENT



DUMB-WAITER CAR NO. 1



HOSPITAL CAR NO. 7
With Improved Spring Grip safety attachment



INVALID LIFT

Sedgwick Machine Works

Manufacturers of Elevators and Dumbwaiters

182 LIBERTY STREET
NEW YORK, N. Y.

PRODUCTS—DUMBWAITERS AND HAND-POWER ELEVATORS of all Types and for every Purpose; PRIVATE-HOUSE DUMBWAITERS, APARTMENT-HOUSE DUMBWAITERS, HOSPITAL DUMBWAITERS, HOTEL AND RESTAURANT DUMBWAITERS; BRASS-TUBE DUMBWAITERS; HIGH-SPEED, AUTOMATIC-BRAKE, BAND-BRAKE, AND GEARED DUMBWAITERS, ETC.

TRUNK LIFTS, INVALID ELEVATORS, FREIGHT ELEVATORS, HOSPITAL ELEVATORS, ASH HOISTS, SIDEWALK ELEVATORS, CARRIAGE ELEVATORS, AUTOMOBILE ELEVATORS, ETC.

SPECIAL FEATURES—Excellence of Design, Material, Construction and Finish.

DELIVERIES—Catalog sizes are carried in stock and shipped the day ordered. Special sizes in three to four days.

INSTALLATION—Proper installation is essential:—We furnish blue-prints and full directions for erecting, or will send our own expert and experienced mechanics to erect.

Customers will always obtain best results by purchasing complete outfits.

CONSULTATION—Our experience of nearly fifty years in the manufacture and installation of Elevators and Dumbwaiters is at your service. Consult us freely when making preliminary sketches, and we may be able to make valuable suggestions which will insure satisfactory results and save annoyance and expense.

SPECIFICATIONS—Specify as follows: "The Dumbwaiter (or Elevator) herein called for is to be manufactured and installed by the Sedgwick Machine Works, 182 Liberty St., New York."

This will insure that all contractors shall figure on the same apparatus, the owner will obtain what he pays for, and the architect can feel assured that the work shall be properly done and be satisfactory in every respect.

If local mechanics are to erect simply omit "and installed."

"A.B.C." SYSTEMS

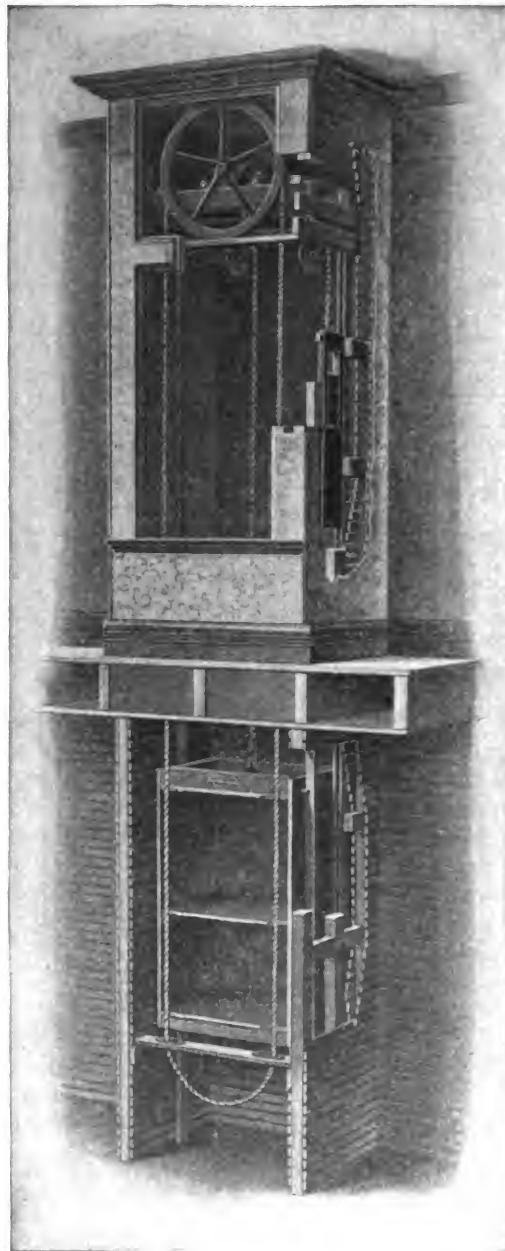


FIG. A.—SEDGWICK AUTOMATIC BRAKE DUMBWAITER
ERECTED IN PLASTERED SHAFT

PRICES, DRAWINGS, ETC.—On the following pages will be found net consumers' prices, but whenever desired we will submit estimates, drawings and special descriptive matter to accompany same.

SPECIALS—We manufacture special and other outfits not shown. Consult us if you do not see what you want.

DUMBWAITERS—The Sedgwick Machine Works manufactures Dumbwaiters of all types and for every service.

The three types described here are most generally used. For special requirements we will submit special details and drawings.

The Automatic Brake Dumbwaiter is intended for general private-house work. The load cannot run down, but is automatically held by the machine itself without the use of any check or brake line.

The Band Brake is designed for specially hard service.

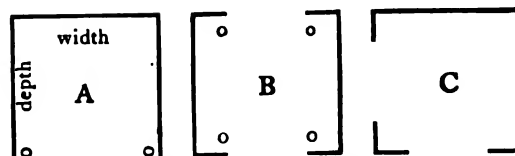
The Simplex Dumbwaiter is a good low-priced outfit.

PLANS—The plans given below show various positions of Dumbwaiter doors:

A—Open at front on all floors; the best arrangement where it can be used.

B—Requires a Double-Face Fixture if operated from both sides, but for two floors a Single-Face Fixture, operated from one floor, with Double-Face Car, is often all that is necessary.

C—Open at front and R or L, say which. This arrangement is to be avoided if possible.



FLOOR PLANS OF DUMBWAITERS

Continued on next page

DATA "SEDGWICK" IMPROVED DUMBWAITER OUTFITS (Figs. A and B)

No.	Size of Car (Outside)	Size of Ceiled Well (Inside)	Capacity Lbs.	Shipping Weight (Pounds)	Prices of Single-Face Outfits				Prices of Double-Face Outfits	
					Auto-matic	Sim-plex	Band Brake	Add for Extra Height per Ft.	Add for Double Face	Add for Extra Height per Ft.
1	20" x 16"	23" x 19"	25	215	\$36.00	\$24.25	\$43.50	\$0.30	\$6.00	\$0.45
2	24" x 20"	27" x 23"	50	285	44.00	30.00	52.00	.35	6.00	.45
3	28" x 24"	31" x 27"	75	360	53.00	35.00	62.50	.40	7.00	.55
4	34" x 30"	38" x 33"	100	470	62.00	40.00	71.50	.40	7.00	.55

GEARED DUMBWAITERS—Geared Dumbwaiters should be installed where the service is heavier than that of the average private house. These outfits are built in two types, the Automatic and the Band-brake, and are specially designed for Hospitals, Hotels, Restaurants, etc.

DATA "SEDGWICK" GEARED DUMBWAITER OUTFITS

No.	Size of Car (Outside)	Size of Ceiled Well (Inside)	Shipping Weight (Pounds)	Price of Single-Face Outfits			Price of Double-Face Outfits	
				Band Brake	Auto-matic	Add for Extra Height per Ft.	Add for Double Face	Add for Extra Height Per Ft.
1	20" x 16"	23" x 19"	300	\$68.00	\$78.00	\$0.40	\$10.00	\$0.70
2	24" x 20"	27" x 23"	400	77.00	87.00	.40	10.00	.70
3	28" x 24"	31" x 27"	500	85.00	95.00	.45	10.00	.80
4	34" x 30"	37" x 33"	600	95.00	105.00	.60	10.00	1.00

Complete outfits include machine on platform, car, adjustable counterweight, guide runs for car and weight, and ropes for total height of 20 feet over all, f.o.b. Poughkeepsie, N. Y.

No extra charge for outfits of different sizes and smaller dimensions. Price of special sizes is that of the regular size out of which the special size could be made.

DUMBWAITER CARS—Dumbwaiter cars are regularly built 3 feet high inside and fitted with one hinged shelf, or 3 feet 6 inches high inside and fitted with two solid shelves (in addition to the top and bottom), except the No. 1 cars which are usually 6 inches less in height than above. In the tables of Dumbwaiter Outfits the first measurement given in the columns of sizes is the width from right to left, and the next the depth from front to rear.

Thus, a No. 2 car is 24 inches wide, right to left, and 20 inches deep, front to rear. Complete directions for erecting go with each outfit.



FIG. I. DOUBLE-FACE CAR

FIG. H. CAR WITH TWO SOLID SHELVES



FIG. K. SEDGWICK ASH CRANE

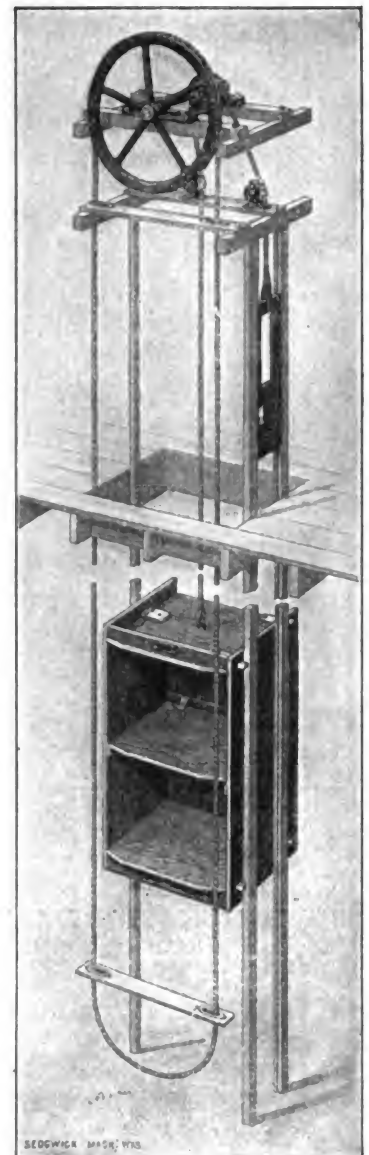
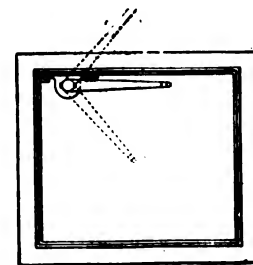


FIG. B. SEDGWICK DUMBWAITER (Erected) Enclosure Removed

SEDGWICK ASH CRANE—(Fig. K)—Simple, economical; specially adapted for small office buildings, lofts, hotels, apartment houses, residences, etc.

When not in use the crane drops below sidewalk level, as indicated by dotted lines.

Price complete, \$35.00, exclusive of can.



PLAN SHOWING TURNING OF CRANE

"A.B.C." SYSTEMS

Continued on next page

SEDGWICK INVALID ELEVATORS—The Sedgwick Hand-Power Invalid Lift, Fig. E, is indispensable in many homes, as well as in Hospitals and Sanatoriums.

This elevator is easily operated, and is simple, strong, and reliable. It is under perfect control at all times either from the car itself or from any floor. The brakes are powerful, gradual in their action, very easily applied, and will hold the load at any point by means of our self-locking device.

We build these outfits in sizes to meet the special requirements of each purchaser, and the machines are fitted with anti-friction steel roller bearings, heavy iron frames, suitably braced, which keep the bearings in line and the gears in mesh.

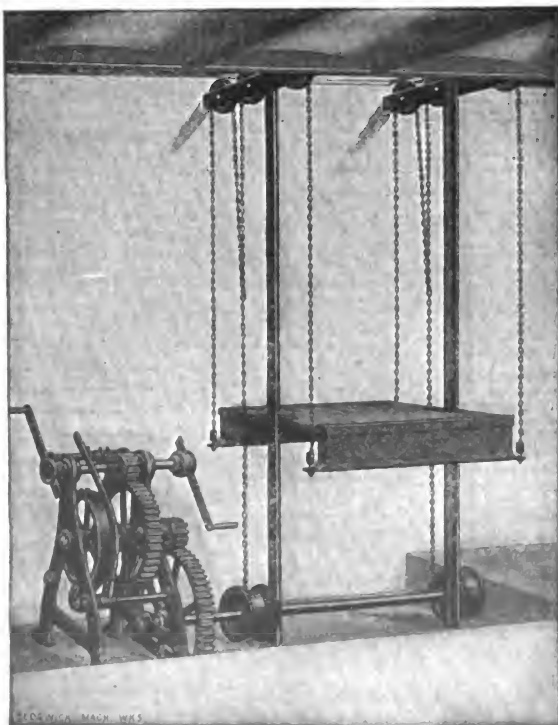
SIZES, PRICES AND WEIGHTS OF INVALID LIFTS (FIG. E)

Size of Car	Size of Well		Price of Outfit	Add per Ft. of Height	Shipping Weight lbs.
	Width	Depth			
3' x 3'	3'-4"	3'-3"	\$175.00	\$0.75	950
3½' x 3½'	3'-11"	3'-9"	250.00	1.00	1200
4' x 4'	4'-6"	4'-3"	300.00	1.10	1300
4½' x 4½'	5'-0"	4'-9"	325.00	1.20	1700
6' x 6'	6'-8"	6'-4"	400.00	1.50	2000



SEDGWICK INVALID ELEVATOR (FIG. E)

SEDGWICK SIDEWALK ELEVATORS—The Improved Sedgwick Sidewalk Elevator, Fig. F, is the latest and best development of this type of elevator. It is strong, simple, substantial, durable, easily operated and safe.



SEDGWICK SIDEWALK ELEVATOR (FIG. F)

DATA, SEDGWICK SIDEWALK ELEVATOR (Fig. F)

Capacity	1500 lbs.	2000 lbs.	2500 lbs.
Machine.....	\$60.00	\$60.00	\$65.00
Main Gear 2 drums, Shaft and 2 boxes.....	36.75	41.75	45.00
Trusses.....	42.00	45.00	45.00
Uprights, 10 ft.....	8.00	8.00	8.00
Platform.....	4' x 4' 20.00	5' x 5' 22.00	5' x 5' 22.00
Chains.....	23.25	23.25	25.00
Price of Outfit Complete.....	\$190.00	\$200.00	\$210.00
Add for extra height, per foot.....	\$2.50	\$2.50	\$2.50

SEDGWICK FREIGHT ELEVATORS—The Sedgwick Hand-Power Elevators (Fig. D) are built for strength, durability and ease of operation. They are suitable for private houses as Trunk Lifts, etc.; for use in schools, hotels, stores, factories, warehouses, etc. They are fitted with steel anti-friction roller bearings, have strong, rigidly-braced iron frames, both to keep the gears properly in mesh and the bearings in line under all circumstances. Fitted with the Improved Sedgwick Self-locking Indestructible Band Brake, and we recommend the use of double cables independently attached both to car and counterweight.

DATA SEDGWICK IMPROVED HAND-POWER FREIGHT ELEVATORS (FIG. D)

Capacity Lbs.	Size of Car	Size of Well	Price of Outfit	Add for Each Ex- tra Foot of Height	Shipping Weight Lbs.
500	3 ft. x 3 ft.	3'-4" wide x 3'-3" deep	\$89.00	\$0.55	750
600	3 ft. x 3 ft.	3'-5" wide x 3'-3" deep	102.50	.70	950
800	3½ ft. x 3½ ft.	3'-11" wide x 3'-9" deep	140.50	1.00	1175
1000	4 ft. x 4 ft.	4'-6" wide x 4'-3" deep	158.50	1.05	1260
1200	4½ ft. x 4½ ft.	5'-0" wide x 4'-9" deep	180.00	1.10	1665
1500	5 ft. x 5 ft.	5'-6" wide x 5'-4" deep	198.00	1.20	1800
2000	6 ft. x 6 ft.	6'-10" wide x 6'-4" deep	224.00	1.50	2200
2500	6 ft. x 6 ft.	6'-10" wide x 6'-4" deep	238.00	1.60	2500

Complete outfits include machine, side-post freight car 6 feet 6 inches high in clear; guide runs for car and weight, requisite ropes and cables for total of 20 feet over all, and adjustable counterweight, f.o.b. Poughkeepsie, N. Y.
Price on outfits of greater size or capacity quoted upon request.
Blue-prints and full directions for erecting sent with each outfit.
In the 500 lb. outfit the car is carried by the best quality of Manila rope.
In all other sizes the car is carried by two wire cables, each independently attached to car and counterweight.

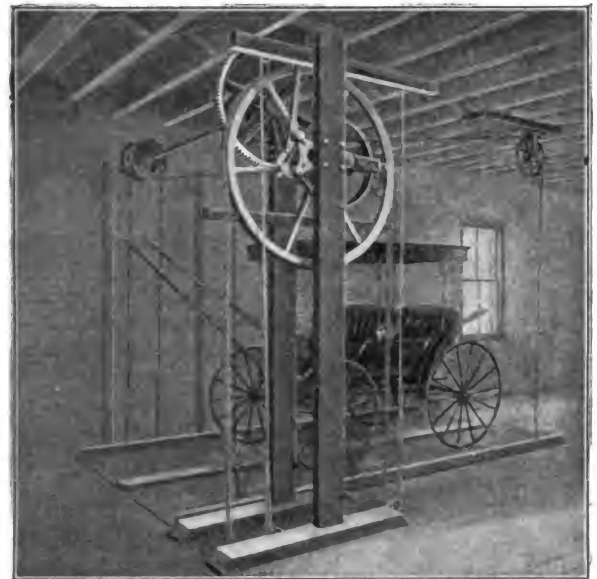


FIG. C.—SEDGWICK VEHICLE LIFT

SEDGWICK VEHICLE LIFT—The Sedgwick Carriage, Wagon, and Automobile Elevators are strong, reliable and easy running. These elevators are built in any size and of any capacity.

DATA SEDGWICK VEHICLE LIFTS (Fig. C)

Capacity.....	1500 lbs.	2000 lbs.	2500 lbs.	4000 lbs.	5000 lbs.
Gearing.....	\$102.00	\$120.00	\$132.00	\$200.00	\$250.00
Platform.....	7½ x 12 ft. \$36.00	7½ x 14 ft. \$42.00	8 x 15 ft. \$45.00	8 x 18 ft. \$85.00	8 x 18 ft. \$100.00
Guide Runs.....	7.25	7.25	7.25	15.00	25.00
Ropes and Cables.....	41.75	45.75	45.75	50.00	60.00
Counterweight.....	23.00	28.00	30.00	50.00	65.00
For total of 20 ft. or less...	\$210.00	\$243.00	\$260.00	\$400.00	\$500.00
Add for each additional ft. of height.....	\$1.70	\$1.90	\$1.90	\$2.00	\$2.00
Shipping weight about...	2000 lbs.	2400 lbs.	2800 lbs.	3500 lbs.	4000 lbs.

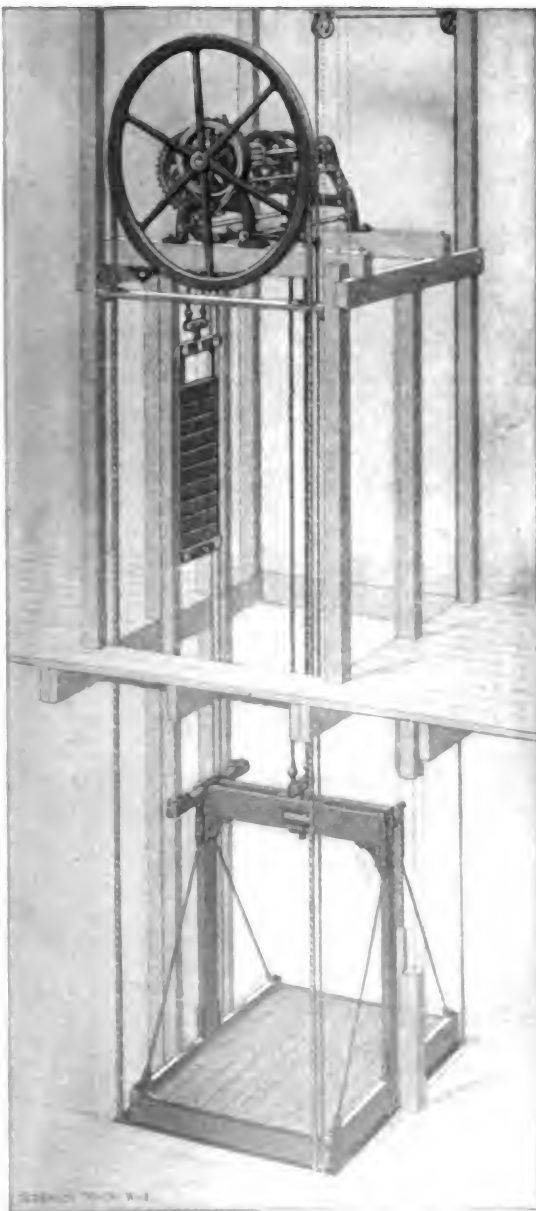
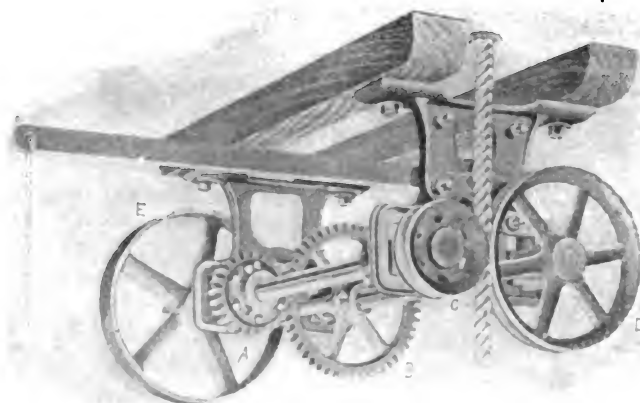


FIG. D.—SEDGWICK FREIGHT ELEVATOR

"A.B.C." SYSTEMS



SEDGWICK DIFFERENTIAL GRIP

SEDGWICK DIFFERENTIAL GRIP—For use in connection with hand-power elevators where it is desired, in the case of lifting heavy weights, to apply power by means of belt from motor or shafting. May be put on floor, ceiling or joist work.

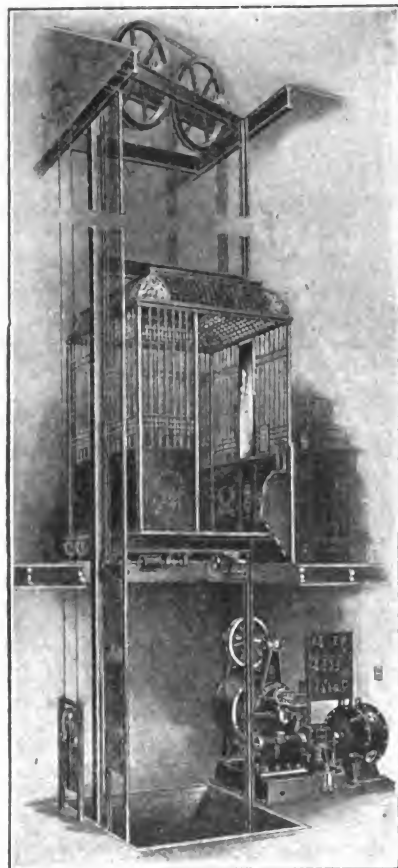
Two sizes: Smaller, \$78.00; larger, \$114.00.

The H. J. Reedy Co.

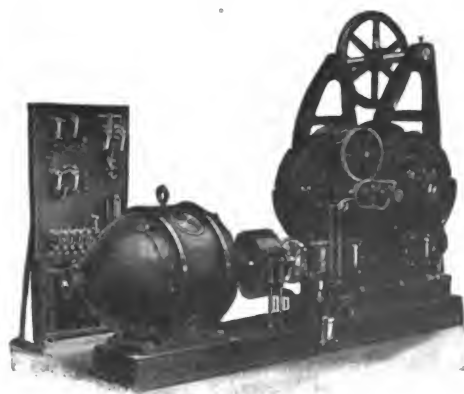
(Incorporated)

Manufacturers of High-Grade Elevators

CINCINNATI, OHIO



PUSH BUTTON PASSENGER ELEVATOR,
FULL MAGNET CONTROL, BASE-
MENT CONSTRUCTION



TANDEM GEAR, FULL MAGNET CONTROL

ORDERING INSTRUCTIONS—When ordering please give full particulars: Kind of elevator required; power to be used; load to be lifted; size and details of hatch opening; whether building is of steel, brick or wood construction.

"A.B.C." SYSTEMS

PRODUCTS—ELEVATORS OF ALL DESCRIPTIONS—**Electric:** ELECTRIC TRACTION; DIRECT-CONNECTED ELECTRIC WORM-GEAR ELEVATORS, 5 Types; BELT-CONNECTED ELECTRIC ELEVATORS, 6 Types; ELECTRIC DUMBWAITERS; PUSH BUTTON CONTROL for Electric Elevators and Dumbwaiters; ELECTRIC AUTOMOBILE AND CARRIAGE LIFTS; ELECTRIC SIDEWALK ELEVATORS; ELECTRIC ASH HOISTS

Hydraulic: DIRECT-LIFT, OR PLUNGER, HYDRAULIC ELEVATORS; HORIZONTAL HYDRAULIC ELEVATORS; VERTICAL HYDRAULIC ELEVATORS, DUMBWAITERS; BOOK HOISTS; SIDEWALK ELEVATORS; ASH HOISTS; AUTOMOBILE LIFTS

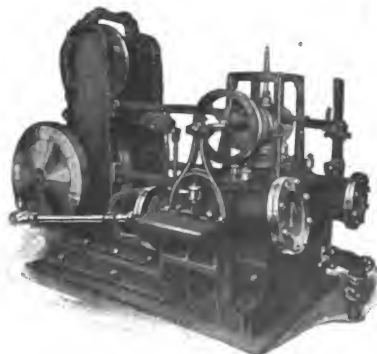
Steam Traction Elevators: VERTICAL STEAM ELEVATORS, Passenger and Freight Service; HORIZONTAL STEAM ELEVATOR, Passenger and Freight Service

Worm Gear Elevators: (Driven from Line Shaft, Gas Engine, Electric Motor) BRONZE-GEAR BALL BEARING; BRONZE WORM OR BRONZE WHEEL; 4", 6", 8" STANDARD WORM GEARS

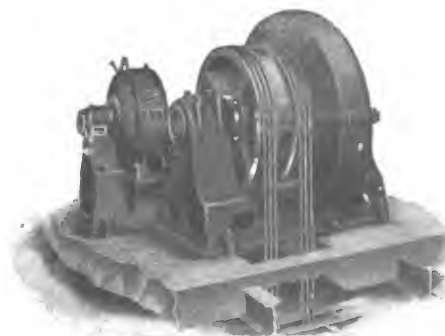
Hand Power Elevators: AUTOMOBILE ELEVATORS; CARRIAGE ELEVATORS; INVALID LIFTS; 5 Types of HAND-POWER FREIGHT ELEVATORS; SIDEWALK LIFTS; DUMBWAITERS

NOTE—In cases where standard machines are not suited to customer's needs we will design and build special machines.

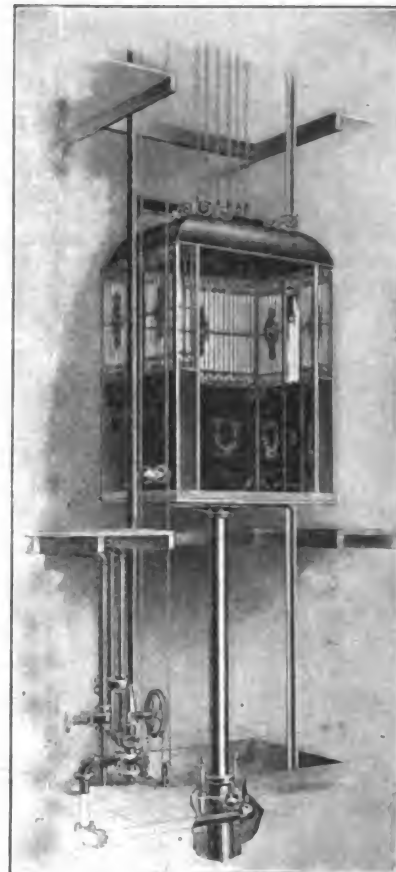
ADVANTAGES OF REEDY ELEVATORS—Our machines are safe, durable, economical to operate, of highest mechanical efficiency, simple of design, of massive con-



DIRECT-CONNECTED STEAM TRACTION ELEVATOR,
INSTANT SPEED VARIATION FROM 10
TO 600 FEET PER MINUTE



HELICAL GEAR MACHINE



HYDRAULIC PLUNGER PASSENGER
ELEVATOR

struction. They are noiseless in operation, controlled with ease and certainty, easily and quickly adjusted. The parts of each type of elevator are made interchangeable.



BELT-CONNECTED FREIGHT ELEVATOR

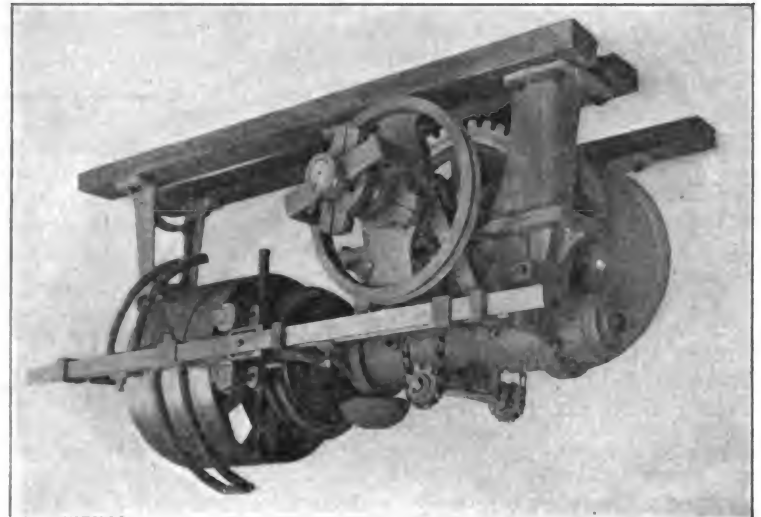
The Cohoes Iron Foundry & Machine Co.

Elevator Equipments

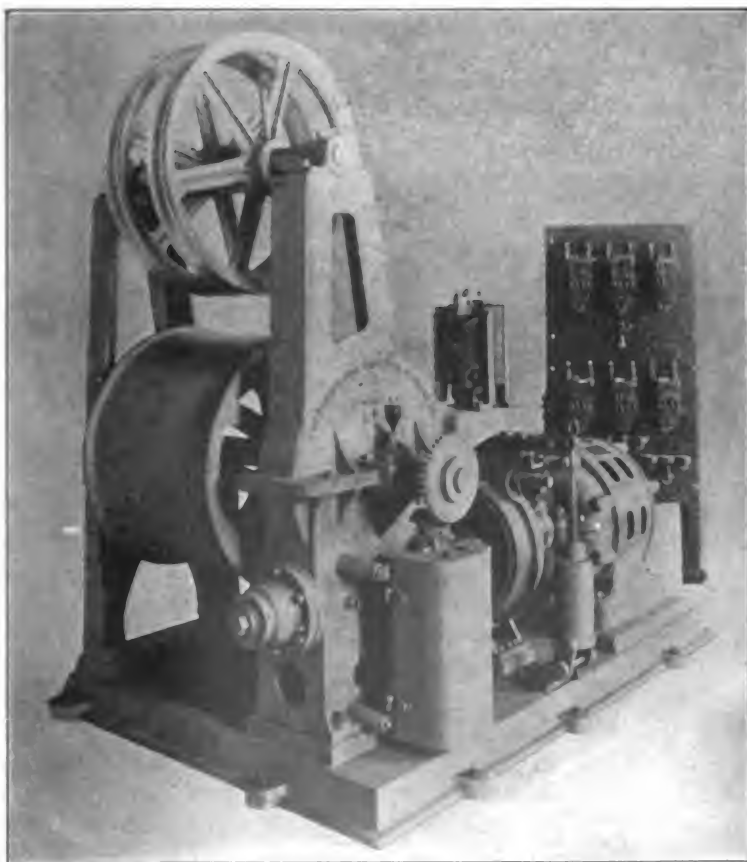
COHOES, N. Y.

PRODUCTS—ELECTRIC PASSENGER AND FREIGHT ELEVATORS. ELECTRIC AND HAND-POWER GARAGE ELEVATORS. ELECTRIC AND HAND-POWER HOUSE ELEVATORS. ELECTRIC AND HAND-POWER DUMB WAITERS. BELT-DRIVEN ELEVATORS. HAND-POWER FREIGHT ELEVATORS. SIDEWALK LIFTS. AUTOMATIC GATES AND HATCH DOORS for Hoistways

NOTE—During thirty years of scientific study of Engineering problems in all kinds of elevator work, our products have been developed to highest efficiency. We maintain a competent force of Engineers and are prepared to make complete layout of plans or to act in advisory capacity. We can quote on jobs installed complete or made up according to specifications and shipped f. o. b. our siding, for installation by your own experts. Materials used by us are of highest grade only and can be depended upon for absolute reliability.



BELT-DRIVEN WINDING ENGINE



ELECTRIC ENGINE, FULL MAGNET CONTROL

INFORMATION REQUIRED FOR ESTIMATE—For all Types: Capacity, Speed, Number and Height of Floors, Size of Car, or Size of Hatchway, Location of Winding Engine, Steel or Wood for Guides and Sheave Beams, Style of Car, Value of Cage, Method of Control, Gates or Hatchway Doors if required, Grating under Sheaves.

For Electric-Driven Types: State whether Current is Direct or Alternating and give Voltage; if Alternating, give Phase and Cycles. State Type of Winding Engine, whether Direct-Connected, Chain-Driven, or Single Belt-Driven.

For Belt-Driven Types: State whether Winding Engine is to be driven from line shaft, countershaft, or other source of power. Give location of power with reference to Hatchway.

If possible, send a sketch or blue-print showing Hatchway, its location in building, entrances to car, and location or space prepared for the Winding Engine.

On request, we will be glad to send our Application Sheet, which gives a complete list of the information required for an accurate estimate.

Estimates are gladly furnished, and specifications submitted on any equipment.

"A.B.C." SYSTEMS

Otis Elevator Company

Elevators, Dumbwaiters, Furnace Hoists, Escalators

17 BATTERY PLACE
NEW YORK, N. Y.

OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD

PRODUCTS—Manufacturers of PASSENGER AND FREIGHT ELEVATORS AND DUMBWAITERS; Operated by Electric, Hydraulic, Steam, Belt, or Hand Power; AUTOMOBILE AND CARRIAGE HOISTS;

ESCALATORS, OR MOVING STAIRWAYS; INCLINED FREIGHT ELEVATORS; INCLINED TRUCK AND SIDEWALK ELEVATORS; FREIGHT CARRIERS; INCLINED RAILWAYS; SPIRAL GRAVITY PACKAGE CONVEYORS; FURNACE HOISTS; WHIP HOISTS, ETC.

TYPES AND SERVICE—In details of power mechanism and service the various products of the Otis Elevator Company are, briefly, as follows:

HAND-POWER ELEVATORS, CARRIAGE HOISTS, AND DUMBWAITERS—For use where the service does not warrant an expenditure for power.

BELT-POWER ELEVATORS—Of slow speed, for freight service. Made in three types: double-belt, run from shafting; single-belt, and silent-chain, both run from a reversible motor worm-and-gear transmission, controlled by hand cable.

ELECTRIC-DRUM TYPE ELEVATORS AND DUMBWAITERS—For high-grade service, passenger and freight; hand rope, switch in car, or push-button control.

ELECTRIC-TRACTION ELEVATORS—Especially for service in high-class office buildings and wherever high speed is required. Elevators of remarkably high efficiency and low cost of maintenance.

HYDRAULIC ELEVATORS—Either of the standard geared vertical and horizontal types, for high and low-pressure service, or of the plunger or direct-lift type employing a cylinder sunk in the earth directly under the car. In the latter type the car, instead of being suspended from cables is carried on a steel plunger actuated by water pressure in the cylinder; control is by hand, rope or lever.

HYDRO-STEAM ELEVATORS—Of the hydraulic type, driven from a closed hydraulic tank from which the water is forced by steam admitted direct from boilers.

AERO-HYDRO ELEVATORS—Which operate the same as the Hydro-Steam type, with compressed air substituted for steam.

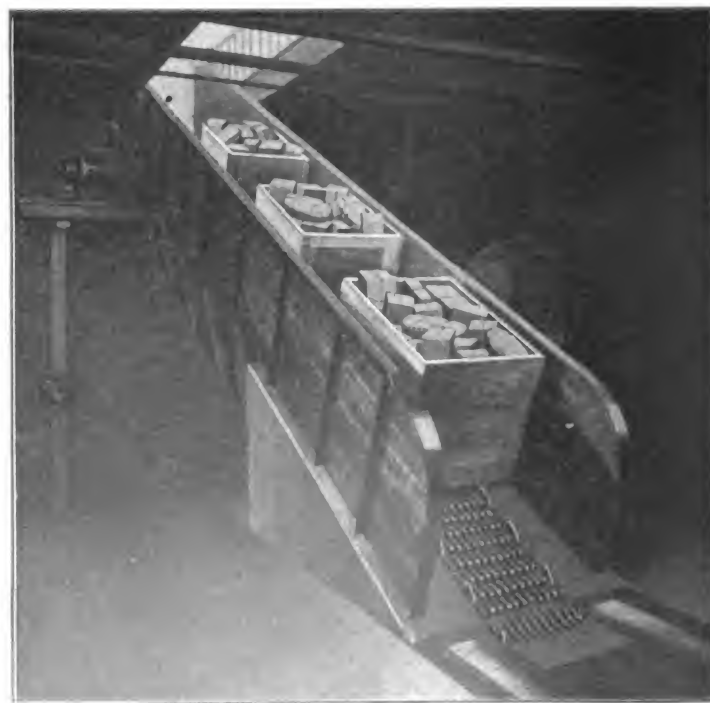
"A.B.C." SYSTEMS

WEIGHTED HYDRAULIC ACCUMULATORS—For high-pressure systems, including valves and regulating apparatus.

STEAM ELEVATORS—Used principally for freight service. Direct-driven and belted. The steam engine is mounted on same base as winding machine. Speeds up to 250 feet per minute, with steam pressure from 60 pounds upwards.

ESCALATORS, OR MOVING STAIRWAYS—Operated by electric motor, with a carrying capacity of 3,600 to 10,800 passengers per hour from floor to floor in stores, mills, factories, subways, railroad terminals, elevated stations, approaches to viaducts or bridges, etc.

INCLINED FREIGHT ELEVATORS—Similar type to Escalators, but adapted to freight service.



OTIS INCLINED ELEVATOR IN FACTORY SERVICE

Continued on next page

INCLINED RAILWAYS—Electric or steam-driven.

INCLINED TRUCK AND SIDEWALK ELEVATORS AND FREIGHT CARRIERS—For factories, stores, warehouses, steamship piers, railway freight stations, etc., where merchandise is to be moved expeditely from one level to another.

FURNACE HOISTS—Electric or steam-driven, with all the controller and safety features of first-class elevator equipment.

SPIRAL GRAVITY PACKAGE CONVEYORS—For department stores, factories, warehouses, railway terminals, express offices, etc.

SPECIFICATIONS AND DATA—Complete specifications and data will be furnished, without obligation, by any of our offices, as to what is best suited to specific requirements in regard to apparatus above outlined, together with advice on how to locate and install to the best advantage.

INSTALLATIONS—Thoroughly experienced workmen will be sent to supervise and erect.

OTIS AUTOMATIC PUSH-BUTTON ELEVATOR—This type, with which many of the finest residences throughout the world are equipped, affords all the comfort and convenience so long demanded for transporting persons to any floor in residences, without the necessity of an operator, and free from the danger connected with running an ordinary elevator. Every room in a house is made accessible and "livable" by the installation of these elevators.

OTIS INCLINED ELEVATORS—Especial attention is directed to the Otis Escalator, or Moving Stairway, which we manu-

facture under Seeberger patents, and which in passenger service has a capacity of 3,600 to 10,800 per hour, up or down; also to the Otis Inclined Elevator, manufactured under Reno patents, for freight service, which will move 600 to 1,960 loaded trucks, with or without men, per hour, according to speed. It takes six to eight vertical plunger elevators of the usual type to handle the same volume of passengers or merchandise in a like time; hence, the saving in time and cost and the general advantage of using these types of conveyors is most apparent.

COST OF OPERATION—The cost varies in proportion to the number of persons or pounds handled in an entire stated period of continuous operation. These machines of all types, both passenger and freight, have high efficiency, and the power consumption will be directly proportional to the service required.

LIFE AND MAINTENANCE—These types of Elevators have been in continuous service for over ten years. Maintenance cost has in all cases been very small, comparatively nothing in proportion to the millions of passengers and pounds carried. This is accounted for by the mechanical excellence of the design, the use of material best adapted to the service intended, and to painstaking workmanship.

ADVANTAGES—Briefly, the chief advantage of the Otis Inclined-type Elevator lies in the fact that it *moves continuously in one direction*, up or down. No time is wasted in stops to load and unload; there is no waste of power from frequent starting; no passengers are kept waiting; the quicker transportation service so insistently demanded is furnished.

Both in freight and passenger work the movement is continuous. Loaded trucks may be handled as fast as desired, delivering 600 to 1,960 trucks an hour, with or without men. Neither freight nor passenger installations require a constantly-employed operator; they use but little power, and take up less room, capacity considered, than the vertical elevator. The initial cost of installation is comparatively small.

TECHNICAL DESCRIPTION—All framework is constructed of riveted steel trusses. The mechanism is such that a continued series of steps are formed upon the traveling incline as it rises up through the landing at the lower floor line. These steps in the Escalator or Moving Stairway are much as in ordinary stairways, but in the Inclined Freight Elevator they are *ridged and grooved lengthwise* of the incline. In either case they pass under a similar landing at the upper floor line of the stairway, so that passengers or merchandise are landed automatically. No care or attention is required on the part of passengers in boarding or alighting from, the escalator. Wearing apparel **cannot be caught** by any part of the mechanism.

The entire structure does not weigh more than the actual floor space which is displaced by the framework. It can be installed in any ordinary building without extra columns for its support. Angle of inclination is 25 degrees.

SPECIFICATIONS AND INSTALLATIONS—We maintain an Engineering Department, and will, without obligation, submit plans, specifications, and cost for any type of Escalator, or Moving Stairway, or for any type of Inclined Elevator, as may be required either for passenger or freight service, and will furnish expert workmen to supervise and install them in any part of the world.



OTIS ESCALATOR IN DEPARTMENT STORE SERVICE.

James Murtaugh Company

Manufacturers of

Hand and Electric Elevators and Dumbwaiters

Established
1855

237 EAST 41ST STREET
NEW YORK, N. Y.

Incorporated
1903

PRODUCTS—HAND-POWER ELEVATORS AND DUMBWAITERS of every Description; ELECTRIC SIDEWALK ELEVATORS, DIFFERENTIAL-GRIP ATTACHMENTS; ELECTRIC PUSH-BUTTON DUMBWAITERS; HAND-POWER-TRUNK LIFTS, ASH HOISTS, FREIGHT, CARRIAGE, AUTOMOBILE, SIDEWALK, INVALID AND PASSENGER ELEVATORS for Private Residences

SPECIALISTS IN FIREPROOF EQUIPMENTS

FEATURES—The oldest Hand-power Dumbwaiter manufacturers in the world. Only the highest class of skilled labor is employed in our work.

HAND-POWER DUMBWAITERS—AUTOMATIC—The machinery is absolutely self-retaining, automatically holding the load securely at any point in shaft the moment the operator ceases to pull or releases the hand rope. These machines are installed for capacities from 25 to 500 lbs., and are used for apartment house, store, factory, hospital and restaurant work.

CHAIN ATTACHMENT—Special attention is called to our Chain Attachment for all Dumbwaiters, particularly those used for heavy work. The chain is substituted for the old-fashioned Manila rope or cable; it is indestructible, non-slipping, noiseless, absolutely safe and an expense saver in the end.

BRAKE BAND—These machines are especially adapted for high shafts for loads up to 150 lbs. The Dumbwaiter itself is Murtaugh's Standard Patent with the addition of a brake band, the travel of the car being controlled by a brake or check rope.

RAPID RUNNING—The Murtaugh "Three-Wheel" arrangement for quick service and light loads is unparalleled. The working sheaves are all accurately turned and grooved, the cars equipped with air checks to arrest sudden landing at top or bottom terminals of shaft. An automatic catch is installed at top of shaft to hold loaded car at that point.

RECIPROCATING—This is a system whereby one car balances the other, one car ascending as the other descends.

CARS—STEEL AND WOOD—Murtaugh cars are made of hardwood, dovetailed by hand, strongly reinforced with corner irons, and fitted with hinged, permanent or portable shelves. We also manufacture fireproof steel cars.

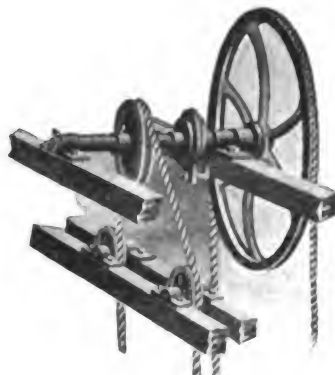
ROPES—None but the best quality Imported Russian Hemp hand and Manila counterweight ropes are used.

ELECTRIC PUSH BUTTON DUMBWAITERS—Have full Automatic Control whereby cars can be sent to any floor from any floor, or called to any floor by means of a bank of push buttons installed outside the shaft.

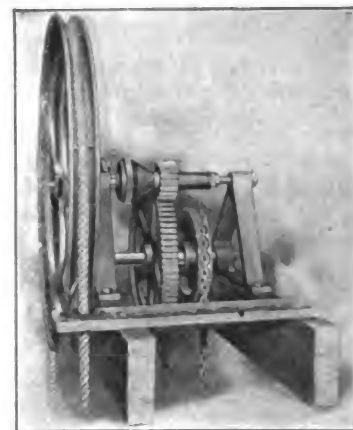
OUR RECORD—More than 100,000 of our machines are in use in all parts of the world.

ESTIMATES—To Architects, Engineers, General Contractors and Owners: In writing for prices of our machines state size and height of shaft, capacity required, location of doors leading to shaft and material of which shaft is constructed. All our machines are made to order, thus insuring perfect action and efficiency.

REFERENCES—We can refer to fully 90% of the leading Architects, Engineers and General Contractors throughout the United States.



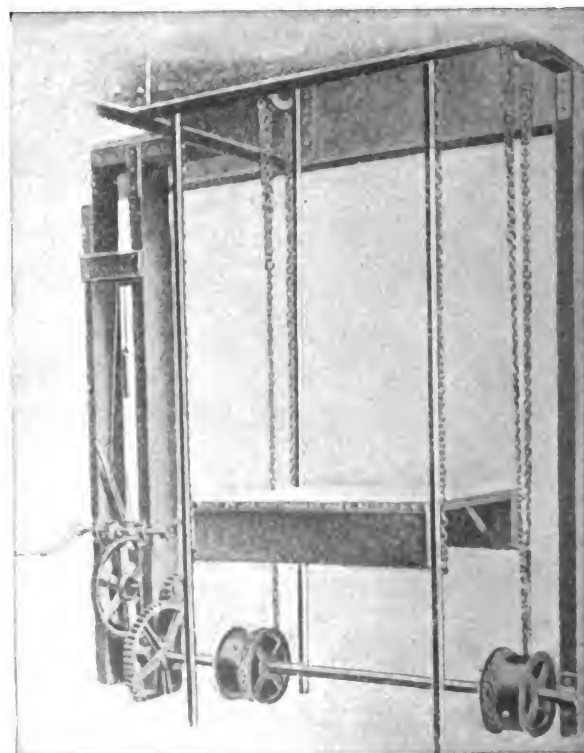
PLAIN AUTOMATIC MACHINERY
CAPACITY, 25 TO 125 LBS.



AUTOMATIC GEAR MACHINERY
CAPACITY, 100 TO 500 LBS.



THE MURTAUGH CAR



HAND-POWER SIDEWALK ELEVATOR AND ASH HOIST

The Standard of the World for more than 57 years

"A.B.C." SYSTEMS

Weller Mfg. Co.

Builders of

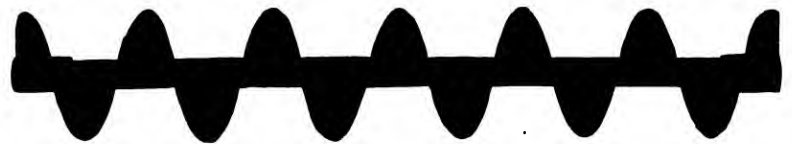
Elevating, Conveying and Power Transmitting Machinery
CHICAGO, ILL.

PRODUCTS—APPARATUS AND MECHANISM FOR ALL ELEVATING, CONVEYING AND POWER TRANSMISSION PURPOSES in Manufacturing Plants, Warehouses, Breweries, etc.



SPIRAL CONVEYORS—All Weller-Made Spiral Conveyors have cold-rolled sectional flights, the most reliable and durable style of construction for the purpose. We manufacture all types for handling different classes of material.

MATERIALS, WORKMANSHIP—All materials entering into the construction of Weller machinery are of the highest quality. Weller methods of design are based on years of wide experience. The accuracy with which machine details are turned out and the care exercised in assembling parts guarantee the maintenance of the high reputation obtained by this firm's products.



SPIRAL SCREW CONVEYOR

CO-OPERATION—Our engineering department will cheerfully co-operate with architects, engineers, contractors and others interested in the selection of proper elevating, conveying and power-transmitting equipment. Estimates promptly furnished upon request.

BELT CONVEYORS—The Weller Line of Belt Conveyor equipment has been greatly extended and is now exceptionally complete. The requirements of successful and economical handling for a wide variety of materials can now be met in



PILLOW BLOCK

PILLOW BLOCKS—We manufacture these in the Rigid, Ball-and-socket and Ball-joint types, and in all sizes.



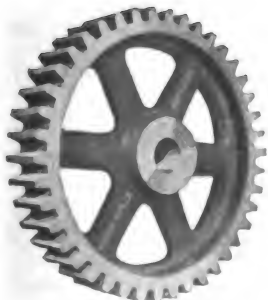
BARREL AND SACK ELEVATOR



BELT CONVEYOR

one or more methods and often with a considerable opportunity for choice among several possible combinations of equipment details.

Inquiries are invited for belt-conveyor work of every description and for all sorts of materials.



GEAR

GEARS—We are headquarters for Gears of all kinds; also for Pulleys, Shafting, Belting, Friction Clutches and other equipment for power transmission.

ELEVATORS—Our line of elevators embraces Tray Elevators for handling barrels, boxes, cases, sacks, etc., and Bucket Elevators for handling coal, ashes, stone, ore, grain, etc.



ELEVATOR BUCKET

ELEVATOR BUCKETS—We make a complete line of Elevator Buckets in various styles and sizes for handling all kinds of material.

"A.B.C." SYSTEMS

CLASSIFICATION PAGE OF SECTION 34

Signal Systems, Telephones, Bells and Chimes, Clocks, Organs

Section Synopsis

A. Electric and Pneumatic Bell Installation and Burglar Alarms; Bank, Store and Warehouse Protective Systems; Electric Signal Systems, for elevators, hotel service, offices, etc.; Telephone Systems for hotels, offices, etc.; Apparatus, Annunciators, Switch-Boards; Electric Door Openers

Speaking Tubes; Dictograph Telephone System; Teleseme Signal Systems; Express Call Systems; Fire Alarm Apparatus;

Electric Signs; Dry and Wet Cells; Multiple-Service Battery Sets

B. Tower Bells and Chimes; Westminster Clock Chimes

C. Clocks for Buildings; Pneumatic and Electric Clock Systems; Program and Secondary Clocks; Tower Clocks; Sun Dials, tower, pedestal; Clock Dials, wood, iron, glass

D. Organs, for church and auditorium; Hydraulic and Electric Organ Blower Motors

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX			Sub-Index Numbers																																												
REGULAR CLASSIFICATION			1 to 20 21 to 40 41 to 60 61 to 80 81 to 100																																												
A	1	Annunciators, all kinds	56	Self-winding regulators					Cat. No.	Manufacturers having Catalog data in this Section	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100																																
	2	Batteries, dry, wet	57	Silencing devices, clock strike																																											
		Bell Service:—	58	Sun dials, tower, pedestal					C 2	Magneta Clock Co. New York, N. Y.																																					
	3	Electric	59	Synchronizers																																											
	4	Pneumatic	60	Time recorders, or clocks, watchmen's, employees'																																											
	5	Burglar alarms	61	Time stamps, recording																																											
	6	Dictograph telephone systems	62	Tower clocks					A 3	McWade & Co., Wm. J. Chicago, Ill.	10 14 16 18																																				
	7	Direct-line interior telephones, system, and instruments																																													
	8	Door openers, electric							C 3	Thomas Clock Co., Seth Thomaston, Conn.		32 35	46 47 48 49 50 51 54 56 57 59	62																																	
	9	Dry and wet batteries																																													
	10	Electric signal systems, for elevators, hotels, etc.							A 1	Stanley & Patterson New York, N. Y.	15																																				
	11	Electric signs																																													
	12	Express signal systems																																													
	13	Fire alarm signal systems																																													
	14	Letter-box signals																																													
	15	Multiple-service battery sets																																													
	16	Private telephone systems, for hotels, offices, apartments, circuit subscribers, etc.																																													
	17	Protective systems, bank, store, warehouse																																													
	18	Speaking tubes																																													
	19	Telephone switchboards																																													
20	Teleseme signal systems, pneumatic																																														
B	32	Chimes	72	Organ motors, hydraulic, electric					Cat. No.	Manufacturers having Catalog data in this Section	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100																																
	33	Church and tower bells	73	Pipe organs, church, auditorium home																																											
	34	Tubular bells																																													
	35	Westminster clock chimes																																													
C	45	Astronomical observatory clocks	SPECIAL CLASSIFICATION								Cat. No.	Manufacturers having Catalog data in this Section	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100																														
	46	Bronze clock sets	Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.																																												
	47	Clock dials, wood, iron, glass	81	Electric supplies, complete line (S. 40 C)					A 2	Direct-Line Telephone Co. New York, N. Y.								7 16																													
	48	Electric clock systems, master and secondary clocks	82	Telescope mail boxes (S. 30 B & C)																																											
	49	Empire glass clocks	TRADE NAMES																					A 4	Edwards & Co... New York, N. Y.	3 5 8 10 13	48 54 60																				
	50	Individual clocks, for buildings, sidewalks, offices, residences, etc.																													C 1	Howard Clock Co. The E. Boston, Mass.	47 48 50 54 56 57 59	62													
	51	Mantel and hall chiming clocks																																				Globe Electric Specialties Co. S. 42, Cat. 2 (Electric signs)									
	52	Marine service clocks																																					Federal Sign System (Electric) S. 42, Cat. 1 (Electric signs)								
	53	Pneumatic clock systems, master and secondary clocks																																						Krantz Manufacturing Co. S. 30 B, Cat. 7 (Telephone switchboards)							
		Program clocks, master and secondary:—																																							Rawson & Evans Co. S. 20 A, Cat. 1 (Electric signs)						
		Electric																																													
		Pneumatic																																													
	54																																														
	55																																														

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80		
American Bell & Foundry Co. Northville, Mich.		33				Federal Electric Co. Chicago, Ill.	11					Nanz Clock Co. New York, N. Y.			60			
American Electric Telephone Co. Chicago, Ill.	16 19					Felgemaker, A. B. Erie, Pa.			73			National Gauge Co. Brooklyn, N. Y.			52			
American Steam Gauge & Valve Mfg. Co. Boston, Mass.			52			Foot, Pierson & Co. New York, N. Y.	13		61			New Haven Clock Co. New Haven, Conn.			50			
American Watchman's Time Detector Co. New York, N. Y.			60			Frick Clock Co., Fred. Waynesboro, Pa.	1 3		48 50 56 59 60	61 62		Newman Clock Co. Chicago, Ill.			60			
Ansonia Clock Co. Brooklyn, N. Y.			50									North Electric Co. Cleveland, Ohio	16 19					
Ansonia Electrical Co. Ansonia, Conn.	1 3					Gamewell Fire Alarm & Telegraph Co. New York, N. Y.	13		60			Odell & Co., J. H. & C. S. New York, N. Y.				73		
Austin Organ Co. Hartford, Conn.		32		73		General Watchman's Time Detector Co. New York, N. Y.			60			Organ Power Co. Hartford, Conn.				72		
Automatic Appliance Co. Boston, Mass.	1 16 19					Gilbert Clock Co., Wm. L. New York, N. Y.			50			Ostrander & Co., W. R. New York, N. Y.	1 3 5 13 16 18					
Automatic Electric Co. Chicago, Ill.	16 19											Partrick, Carter & Wilkins Co. Philadelphia, Pa.	1 3 5 10 13 16 18					
Automatic Time Stamp Co. Boston, Mass.			48 60	61		Hahl Automatic Clock Co. Chicago, Ill.			53 59			Pearce Co., Frederick New York, N. Y.						
						Hall & Co. New Haven, Conn.				73		Pettes & Randall Co. New York, N. Y.	13 16 19		48 56 60	61		
Bainbridge Electric Co. Philadelphia, Pa.	16					Hamilton & Co., E. A. Grand Rapids, Mich.			60			Prentiss Clock Improvement Co. New York, N. Y.			43 53			
Baird Electric Co. Chicago, Ill.			48 56 60	61		Harris Fire Apparatus Co. New York, N. Y.	13					P. R. Manufacturing Co. Detroit, Mich.	3					
Bell Co., C. S. Hillsboro, Ohio		33				Hartman Electrical Mfg. Co. Mansfield, Ohio	3											
Bishop-Babcock-Becker Co. Cleveland, Ohio				72		Haskell, C. S. Philadelphia, Pa.	3 4	32	72 73			Riggs & Brother Philadelphia, Pa.			45 50 52 60	61 62		
Bunnell & Co., J. H. New York, N. Y.	3 5 16					Hausburg, E. O. New York, N. Y.			60			Ross Valve Mfg. Co. Troy, N. Y.						
						Hepburn Telephone Mfg. Co. Chicago, Ill.	3 16					Russell Electric Co. Danbury, Conn.	13					
						Hillgreen Lane & Co. Alliance, Ohio				73		Schaefer & Budenberg Mfg. Co. Brooklyn, N. Y.			52 60			
Central Telephone & Electric Co. St. Louis, Mo.	1 3 4 5 10 11 16 18 19			72		Holtzer-Cabot Electric Co. Brookline, Mass.	1 3 5 10 12 13 16		60 72			Schwarze Electric Co. Adrian, Mich.	3					
						Hoppe Co., Paul F. New York, N. Y.			52 60			Signalphone Alarm Co. Milwaukee, Wis.	13					
Chaplin-Fulton Mfg. Co. Pittsburgh, Pa.		33										Simplex Time Recorder Co. Gardner, Mass.			60			
Chelsea Clock Co. Boston, Mass.			50 52			Imhauser & Co., E. New York, N. Y.			60			Smith & Hemenway Co. New York, N. Y.	16					
Chicago Telephone Supply Co. Chicago, Ill.	16 19					Imperial Clock Co. St. Louis, Mo.			48 56 56 59	62 61		Sonora Chime Co. New York, N. Y.	3	32 35				
Elkhart, Ind.						International Time Recording Co. Endicott, N. Y.						Special Fire Alarm Electrical Signal Co. New York, N. Y.	13		60			
Cincinnati Bell Foundry Co. Cincinnati, Ohio		33										Spencer Electrical Co. New York, N. Y.	16					
Connecticut Telephone & Electric Co. Meriden, Conn.	1 16 19					Johnson, Nels. Manistee, Mich.		32 35		62		Standard Electric Time Co. Boston, Mass.			48 50 56 59 60	61 62		
Copenhagen Automatic Fire Alarm Co. Sheboygan, Wis.	13					Kimball Co., W. W. Chicago, Ill.				73		Standard Mfg. Co. Bridgeport, Conn.	16					
Corwin Telephone Mfg. Co. Chicago, Ill.	16 19					Knickerbocker Annunciator Co., Inc. New York, N. Y.	1					Star Electric Co. Binghamton, N. Y.	13					
Couch & Seeley Co. Boston, Mass.	1 16 19					Knickerbocker Clock Co. New York, N. Y.			48 50			Stromberg-Carlson Telephone Mfg. Co. Rochester, N. Y.	1 16 19					
Couch Co., S. H., Inc. Atlantic, Mass.	1 16 19					Knickerbocker Electric Co. New York, N. Y.	1 3 10					Stucksted & Brother St. Louis, Mo.		33 35				
Cowles & Co., C. New Haven, Conn.	1 10 18					Kusel Telephone & Electric Supply Co. St. Louis, Mo.	16 18 19					Sumter Telephone Mfg. Co. Sumter, N. C.	16 19					
						Long Distance Telephone Mfg. Co. South Bend, Ind.	16 19											
Dean Electric Co. Elyria, Ohio	13 16 19											Timekeeper Co. Chicago, Ill.			60			
Denio General Electric Co. Rochester, N. Y.	13					McShane Bell Foundry Co. Baltimore, Md.		33 35		60		Universal Mfg. Co. Racine, Wis.			60			
De Veau Telephone Mfg. Co. New York, N. Y.	1 5 10 13 16 19					Magneto Watchman's Clock Co. Brooklyn, N. Y.	5					Utica Fire Alarm Telegraph Co. Utica, N. Y.	1 5 13 16 19 20					
						Manhattan Electrical Supply Co. New York, N. Y.	3 5 13 18			60								
Durfee & Co., Walter H. Providence, R. I.		33 35				Meneely Bell Co. Troy, N. Y.	13 13 32 33 35					Van Dusen Co., E. W. Cincinnati, Ohio		33 35				
						Metropolitan Electric Protective Co. New York, N. Y.	5					Vierkant, H. C. Tarrytown, N. Y.	13					
Eco Magneto Clock Co. Boston, Mass.			60			Minnesota Electric Co. Minneapolis, Minn.	10 12 16 19			48		Viner & Son Buffalo, N. Y.				73		
Electric Goods Mfg. Co. Canton, Mass.	1 3 10 13 16 19					Montauk Fire Protecting Wire Co. New York, N. Y.	13					Western Electric Co. New York, N. Y.	16 19					
						Moon Mfg. Co. Chicago, Ill.	1 3 5 13					Western Telephone Mfg. Co. Chicago, Ill.	16 19					
Electro Clock Co. Baltimore, Md.												Whitney, P. E. Boston, Mass.				72		
Elevator Supply & Repair Co. Chicago, Ill.	3 10 12											Wilhelm, H. Brooklyn, N. Y.	18					
Estey Organ Co. Brattleboro, Vt.			73									Williams & Son, E. A. Jersey City, N. J.		33				

Stanley & Patterson

Manufacturers of Patterson Battery Sets

(Patented U. S. and Foreign Countries)

NEW YORK, N. Y.

MULTIPLE-SERVICE PATTERSON BATTERY SETS will save far more than they cost when installed in any building where a Battery Set is required for the operation of any considerable number of electrical devices, such as Annunciators, Bells, Fire Alarm Signals, etc.

In a Patterson Battery Set the renewal of a cell is as easy as the renewal of an incandescent lamp—though done quickly—by the most inexperienced person, without tools or technical knowledge of any sort—**CANNOT BE DONE WRONG.**

PATTERSON BATTERY SETS will be appreciated by the Architect or Engineer who specifies their installation, because all Battery troubles are eliminated; it is only necessary to select a set of sufficiently high ampere capacity to meet the most severe conditions in building construction and maintenance.

MULTIPLE-SERVICE PATTERSON BATTERY SETS will give from 3 to 12 times the service obtainable from the old style battery set, for two reasons, viz.:

- (a) Because, with the Cartridge Cell Unit screwed home in its receptacle all contacts are positively made. Phosphor-bronze spring clamps in the hard-rubber base of the holder make connections between cells without any loss of power—quite the reverse of the old way.
- (b) Each row or series of cells automatically, by a knife-blade switch, is "cut in" on the busbars of the cabinets, so the current at terminals of side busbars is the voltage of the single row, but the amperage of all the rows; thus many times multiplying the working-life and power of the battery set.

No Architect or Engineer has ever been satisfied with the old "wired-up" type of Battery Set available for building work—yet, until the development of the **PATTERSON BATTERY SET** very little improvement on the crude, unsatisfactory equipment in general use had been made.

No building of any size can afford, as a matter of economy, to be without a **MULTIPLE-SERVICE PATTERSON BATTERY SET** and, when the advantages are carefully weighed, the old-style inefficient method of operating electric battery equipment in Apartment Houses, Hotels, Factories, Business Buildings, etc., will be superseded by this new system.

DESCRIPTION—Lengthy description of the **PATTERSON BATTERY SET** is unnecessary, for a glance at the cuts will tell the story as well as ten pages of description. Briefly, however, we will describe its general design:

The fundamental principle is the suspension of a Screw-Threaded-Top Cartridge Dry Cell as shown from a Hard-Rubber Plate, in which Plate Screw-Cup fittings to receive the cells are provided.

In a **PATTERSON BATTERY SET** there can never be a

loose contact or a bad connection; the cells are suspended and do not rest on any surface where dampness or water could collect to short-circuit. The carrying capacity of the circuit connections in the hard-rubber headpiece is 50 amperes.

In a **PATTERSON BATTERY SET** circuit wires need never be disturbed after once being connected to Battery Set, even though new cells are put in a hundred times.



MODEL "BUC" 26. FLUSH OAK CABINET,
FOUR (4) CIRCUIT CHANGES



COLUMBIA
CARTRIDGE-CELL
UNIT

MODEL "BUC" FOUR (4) COMBINATION CIRCUIT, MULTIPLE-SERVICE—Flush and Surface Wall Cabinet Types—Oak and Steel—These sets are designed to permit, by simply turning a switch handle and reading dial of the switch, any combination of circuits that could possibly be required for the satisfactory operation of electrical signal apparatus in a building.

These cabinets are made in two-row, three-row and four-row sets, and have the following advantages:

TWO-ROW SETS may be run Multiple-Series, or the upper set may be held in reserve and the lower set cut into the circuit, or vice versa. As a fourth combination, if through long service the voltage of the set should be down to a point where electrical devices in the building are not operating satisfactorily, switch may be turned "All-Series," giving, with a number of weak cells, approximately the normal voltage obtainable from the set at multiple-series when cells are new; when this emergency all-series connection becomes necessary, a new set of cells should be procured as promptly as possible.

FOUR-ROW SETS have the same circuit combinations as the two-row sets, but with the dial reading "Multiple-Series," the capacity of the set is 80 to 100 amperes, and when either set of two rows is cut out, there is still available a capacity of 40 to 50 amperes.

THREE-ROW SETS should be run multiple-series as long as the three sets are of approximately even amperage; or any of the rows may be cut out, leaving two rows in circuit.

PATTERSON BATTERY SETS



MODEL BMC-36
SURFACE OAK CABINET



MODEL BMC-36
SURFACE STEEL CABINET



MODEL BSC-6
FLUSH STEEL CABINET
DOOR CLOSED



MODEL BSC-6
FLUSH STEEL CABINET
DOOR OPEN

MODEL "BMC" MULTIPLE SERVICE—Surface Wall Cabinet Types—Wood and Steel—Surface cabinets, shown above, are particularly adapted to finished building construction. They are made in polished quartered oak, mission oak, white-wood with priming coat of paint; also in two grades of steel, as follows:

Grade A—Heavy $\frac{3}{8}$ -inch steel, with molding, etc.

Grade B— $\frac{1}{16}$ -inch sheet steel, without molding.

All are regularly made in sizes of from 2 rows of 3 cells ($4\frac{1}{2}$ volts, 50 amperes), to 6 rows of 6 cells (9 volts, 150 amperes).

Larger sizes will be made to order at short notice.

MODEL "BSC" FOR SINGLE SERIES—Flush and Surface Wall Cabinet Types—Oak and Steel—These battery sets, shown above, are designed for the smaller high-class residence where demands upon the battery set are comparatively light. A single-series set will, for the light service, often meet requirements. They are regularly made in sizes from 3 to 12 cells ($4\frac{1}{2}$ to 18 volts, 20 to 25 amperes).

NOTE—If a "split-up" of the battery in the cabinet is desired, provision can be made for this, if specified in advance. For every "split" 3 inches extra in width is required. For example: For residence work 3 cells may be required for an interior telephone system, 6 cells for annunciators, bells, etc., or a total capacity of the battery set of 9 cells, and any combination may be had.

MODEL "BMC" MULTIPLE-SERVICE FOR RESIDENCE WORK—Flush and Surface Wall Cabinet Types—Oak and Steel—These sets are designed particularly for residence installations where electrical devices are required to be always operative.

Each row of cells automatically connects to the side bus-bars of the cabinet, and from the terminals at the ends of the busbars such an increased capacity in amperage is available that the power and life of the battery set are increased threefold.



MODEL BMC-24 SURFACE OAK CABINET

These sets are made in sizes in 2 rows of 4 cells ($6\frac{1}{2}$ volts, 50 amperes).

GENERAL INFORMATION—When ordering always specify style of cabinet, and whether surface steel, surface oak, flush steel or flush oak is desired. All cabinets are furnished with substantial cylinder locks and two keys. Standard finish of wood is quartered oak, hand-rubbed; finish of steel is black enamel.

Solid hard-rubber Model A Strips in place of Skeleton "B" Strips, will be furnished in all battery sets when so ordered, at an advance of 60 cents per cell unit. If double doors are wanted on extra-wide steel sets, we charge 15% additional to our list prices.

Battery sets with circuit combinations to meet special requirements furnished to order, at a slight advance over regular prices.

"A.B.C." SYSTEMS

MODELS "BMC" AND "BSC" MULTIPLE-SERVICE AND SINGLE SERIES FOR TELEPHONE WORK—Flush and Surface Wall Cabinet Types—Oak and Steel—These sets are designed especially for intercommunicating telephone work. They are made in single, double and triple rows (25 to 75 amperes). In the illustration the battery is shown "split" so that at the terminal binding posts on the upper and lower end of busbars, there is available for "talking" circuit the voltage of the three left-hand cells ($4\frac{1}{2}$ volts) and the amperage of the two sets of left-hand cells (50 amperes). For the "ringing" circuit there is available at the two right-hand terminal binding posts the voltage of the four right-hand cells (6 volts) and the amperage of the two sets of four right-hand cells (50 amperes).



MODEL BMC-23-24 TELEPHONE SET

Double-row sets will give three times the service, three-row sets six times the service of the old style battery set.

When the telephone system is installed, circuit connections to both "talking" and "ringing" terminal busbars are made, and when once made, never have to be disturbed.

Special battery cabinets with any arrangement of circuits desired, any voltage and any amperage, will be made to order.

SPECIAL BULLETIN—Special Bulletin No. 216, giving complete description of all styles, sizes and prices, will be sent on application.

Direct-Line Telephone Company

Manufacturers of

Interior Telephone Apparatus and Service

558 MARKET STREET
SAN FRANCISCO, CAL.

810 BROADWAY
NEW YORK, N. Y.

PRODUCTS—Makers of a SECRET SERVICE PIGEON-HOLE TELEPHONE, SECRET SERVICE DESK INSTRUMENT, SINGLE-LINE SANITARY AIR-O-PHONE, COMBINATION SECRET SERVICE and AIR-O-PHONE, AND AUTOMATIC DIAL SWITCH with AIR-O-PHONE, either hand-restoring or automatic-restoring.

SERVICE—This Company furnishes Direct-Line Interior Telephone Service designed for use in Business Buildings, Offices, Factories, Homes, etc. It supplies this service through its two systems which may be used **separately** or in **combination**. One, the SECRET SERVICE system, on which the Company has founded its good reputation, has an ultimate capacity of fifty telephones. The other system of new Sanitary Air-O-Phones, which is its latest development, has a capacity of twenty telephones.

Direct-Line Telephones are rented only, and are maintained by us free of all cost to the user. **This Company accepts the full responsibility for the good performance of its telephones.** Its instruments are wired, inspected and maintained by men trained in its own shops. The Company's records show that requests for attention from its subscribers average less than **one per telephone per year** and are usually answered within an hour. This good record has been attained through the principle of scientific management, and goes far toward proving that an interior telephone should be maintained by a Telephone Company.

The Direct-Line Instruments require no operator, being automatic and fully intercommunicating.

THE SYSTEM—In the Direct-Line System the telephones are interconnected by means of a rotary switching device constructed in the instrument and operated by a small thumb screw, the numbers of the stations being indicated on a dial.

The method of using the Direct-Line is extremely simple. The user takes the receiver from the hook and turns the thumb screw until the number of the station he wishes to call shows in an orifice on the dial. He then pushes the ringing button, and a buzzing sound indicates that the bell at the other end of the wire is ringing and that the desired connection is, therefore, made. If no buzzing is heard, the connection cannot be made, as the line is busy.

When through, the user hangs up the receiver, and the instrument is automatically restored to its line.

SECRET SERVICE INSTRUMENTS—The distinguishing feature of this instrument which sets it apart from all other interior telephones is that it is designed to furnish SECRET SERVICE. While two persons are using the instrument it is impossible for the user of any other instrument on the system to "listen in" or overhear any part of the conversation. While two persons are talking they have the exclusive use of the line and cannot be interrupted by a third party. In case there are twelve of these telephones in an establishment, six of them can be used for talking to the other six *at the same time* without interfering with each other in the slightest degree.

SECRET SERVICE PIGEON-HOLE INSTRUMENT—TYPE S.S.W.

—This instrument, illustrated herewith, is designed to fit into the pigeon hole of a desk, to be used on a swinging arm at the side of the desk, on the wall or at any point convenient to the user. The instrument measures, over all, $3\frac{3}{4}$ inches square and is complete in itself, containing the entire mechanism. Each instrument has an ultimate capacity of **fifty stations**. It is equipped with watch-case receiver and bell. The switching device is operated by simply turning the mouthpiece in either direction until the desired number appears in the orifice above. The bell calling the desired station is rung by means of a push-button at the right of the mouthpiece. **The instrument restores automatically.** It contains rotary switching device with rubbing contact, which is self-cleaning and improves with use. The feature about this instrument which commends itself to engineers and largely accounts for its positive action is the fact that *springs* have not been used in its construction.

The standard finish is dull black enamel with nickel trim.



SECRET SERVICE PIGEON-HOLE INSTRUMENT, TYPE S. S. W.

SECRET SERVICE DESK TELEPHONE—TYPE S. S. D.

—This instrument is complete in itself, having a rotary switching device in its base, which is operated by a thumb screw.

Each instrument is built for an ultimate capacity of twenty-five stations. It is equipped with regular long-distance receiver and transmitter.

The instrument complete is similar in appearance and of about the same weight as the standard desk telephone.

The standard finish is dull black enamel with nickel trim.



SECRET SERVICE DESK TELEPHONE, TYPE S. S. D.

NEW SANITARY AIR-O-PHONE

—Type A. S.—This is the first *sanitary telephone* introduced in America. The receiver and transmitter are combined in one piece. The entire instrument weighs but seven ounces, less than half the weight of the receiver on an ordinary telephone. It has no mouth piece to collect moisture from the breath, and the method of using is to hold the instrument to the ear and talk into the air as in ordinary conversation. The instrument is but seven inches in length and may be hung under a desk, on the leg of a table, on the wall, or at any point convenient to the user. It is of great convenience in dictating letters or telegrams.

The instrument is equipped with a long cord and, as the person dictating holds the instrument to his ear, he may move around freely, consult letters or turn over office memos at will.

One of the amazing features of this new instrument is the fact that it is keyed to *voice sounds* only, all extraneous noises being deadened or shut out. Numerous tests have been made in noisy places with the result that the voice is invariably heard *clearly and distinctly above other sounds*. This has never been achieved before.



NEW SANITARY AIR-O-PHONE,
 TYPE A. S.

The instruments are **self-restoring** and only $4\frac{1}{2}$ inches in diameter and $2\frac{1}{2}$ inches deep.

The standard finish is black enamel and nickel.

HAND-RESTORING AIR-O-PHONE — TYPE A. I.

—This instrument is of the same capacity as the A. R. type and has exactly the same exterior, the only difference being that it is restored by hand instead of automatically.

The standard finish is black enamel and nickel.



COMBINATIONS — The various Direct-Line instruments may be combined, if desired, in one system without suffering thereby in efficiency or interfering with each other in the least.

AUTOMATIC DIAL SWITCH WITH AIR-O-PHONE, TYPES A. R. AND A. I.

SECRET SERVICE AND AIR-O-PHONE—TYPE S. S. A. W.

This instrument is the same as the SECRET SERVICE Pigeon-Hole Telephone, described and illustrated on the preceding page, except that it is used with an Air-O-Phone and operated by a milled wheel instead of a transmitter. In every other particular it is identical with the Pigeon-Hole Telephone and has the combined advantage of the SECRET SERVICE Telephone and the Air-O-Phone. It may be hung under a desk, on the leg of a table, on the wall, or at any point convenient to the user.

The standard finish is dull black enamel with nickel trim.



SECRET SERVICE AND AIR-O-PHONE, TYPE S. S. A. W.

ADVANTAGES—The Direct-Line Telephone system contains fewer parts than any ordinary single-line instrument and yet it performs all the functions of a switchboard and operator.

The convenient switching device cannot get out of order as it has no springs like the Plug System or Push-Button Type. The switch can be turned in either direction, whereas in all other systems it is necessary to make almost a complete revolution of the dial to get the next station.

The Direct-Line System embodies also important improvements in wiring. In other interconnecting systems there are, at least, as many wires as there are telephones plus one, and all the wires run to every telephone. When 10 to 12 instruments are employed, the disturbance from conversation on other wires is so great that independent full metallic circuits are necessary—two separate wires for every station, or twice as many wires as there are telephones.

The Direct-Line System can be operated with any number of telephones, using only as many wires as there are telephones plus one, without the slightest disturbance from other wires. This reduces the cost of construction at least 50%, an important item when figuring on large installations.

SINGLE-LINE AIR-O-PHONE—This is a simple switch and push-button used with the Air-O-Phone. It is $2\frac{1}{2}$ inches in diameter, finished in black enamel. It is equipped with buzzer or bell and is used where **not over three stations** are required.

AUTOMATIC DIAL SWITCH WITH AIR-O-PHONE—TYPE A. R.—This instrument is for use where twenty stations or less are required and where it is not necessary to have SECRET SERVICE.

The instruments are extremely simple in construction and easy to operate.

The simple turning of the pointer to the number desired and pressing the button makes the desired connection.

SPECIAL FINISHES—The Direct-Line instruments with the standard dull black enamel and nickel trim are very handsome in appearance and are equally well suited for homes as well as offices.

In private houses it is often desirable to have interior telephones finished to harmonize with the surroundings. For a slight additional expense we will furnish systems in special finishes to match furniture and decorations. **This is a new idea and, we believe, a good one.** The wiring, being paid for and owned by the subscriber, it may be as simple or as elaborate as he himself may desire.

Suggestions may be obtained from the *Direct-Line* Exhibition Room at 810 Broadway, New York.

William J. McWade Company

Manufacturers of Mail Boxes and Interior Telephones

GENERAL OFFICES: 1923 WEST KINZIE STREET

SHOW ROOMS: 1726 MARQUETTE BUILDING

CHICAGO, ILL.

PRODUCTS—TELESCOPE MAIL BOXES AND INTERIOR WALL PHONES

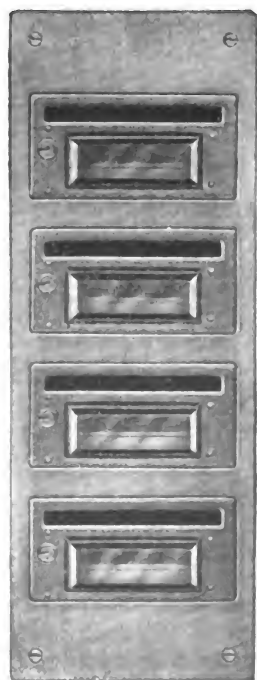
DESCRIPTION—MAIL BOXES—Our Mail Boxes are made in sets of from one to nine telescoping boxes.

These boxes require one-third only of wall space usually allotted to building equipment of that kind, and will hold more than twice the quantity of mail. Also, they will readily receive longer and wider envelopes than other boxes used for that purpose.

All exposed parts are constructed of cast or wrought brass, as desired. Equipped with specially made Yale & Towne spring bolt locks, with duplicate keys. The name card is clearly visible through a cut glass window. All our mail boxes are furnished with or without push buttons, immediately below name card, as ordered, for calling apartments.

IN CONJUNCTION WITH TUBOPHONES—These mail boxes, further, are made to be used in conjunction with tubophones and with telephones for vestibule fixtures. When required, they can be mounted in large groups for club houses and public halls.

VESTIBULE SETS—Our Vestibule Sets, as shown in cuts on this and next page, are made in combinations of one telephone and one mail box to one hundred mail boxes and one telephone, as required.



NO. 4—VESTIBULE MAIL BOX
Size, $5\frac{1}{4}'' \times 13''$. Depth, $4\frac{1}{2}''$. Screw hole centers, $\frac{3}{8}''$ from ends and sides. List Price, \$19.00.



SECTIONAL VIEW OF McWADE'S
LETTER BOXES
These Boxes all require a wall depth of $4\frac{1}{2}''$.

INTERIOR TELEPHONES—We make a full line of inter-communicatory telephones for residences, apartment houses, offices, hospitals, hotels and factories.

Being pioneers in the development of the all-metal telephone, we are prepared to give entire satisfaction to our customers. These classes of goods are designed to present to architects, builders and owners of apartment houses the latest improvements in the line of reliable apartment and residence telephones.

The McWade System offers vestibule and interior fixtures which forcibly distinguish any house from the older type of buildings. Diagrams of circuits are furnished with each shipment.

FINISHES—Our standard telephone finishes are old brass, brushed brass and nickel. Other finishes, causing additional cost, will involve an extra charge in accordance with the work performed.

TUBOPHONES—Our Tubophones are similar in outward appearance to vestibule telephones. For transmission of sound, tubes are used instead of wires.



NO. 507—VESTIBULE SET
Size $11\frac{3}{4}'' \times 15\frac{1}{4}''$. Depth, $4\frac{1}{2}''$. Necessary wall opening, $11\frac{1}{4}'' \times 14\frac{1}{4}''$. Screw hole centers, $\frac{3}{8}''$ from ends and sides. List Price, \$72.00.

"A.B.C." SYSTEMS

Continued on next page

INSTALLATION—In the installation of speaking tubes used in conjunction with our Tubophones, each outlet should have a separate tube (without branches) which should run as direct as possible to its respective apartment. Each tube should have a closed mouthpiece.

PATENTS—June 21, 1904; July 10, 1906.

WALL AND FLUSH PHONES—Illustrations, sizes and prices are set forth below. Further information on application.

HOW TO SPECIFY—Specify the McWade System and explain the design wanted. All designs furnished. McWade's System is the Standard.

PRICES—All prices are F. O. B. our Factory. Our prices are generally the same as other high-class goods used for similar purposes.

TERMS—Thirty days net from date of shipment to firms having approved financial rating or furnishing satisfactory references.



NO. 402—FLUSH PHONE
Size, 4 1/8"x11 1/4". Necessary wall opening, 3 1/4"x9 3/8". Depth, 2 1/8". With one push button. Price, \$17.30.



NO. 502—VESTIBULE SET
Size, 5 7/8"x14 1/8". Depth, 4 1/2". Necessary wall opening, 5 1/2"x11 1/4". Screw hole centers, 5 1/2" from ends and sides. List Price, \$31.30.



NO. 101—WALL PHONE
Size, 4 3/4"x6". Depth, 3". With one push button. List Price, \$15.00.



NO. 6—VESTIBULE SET
Size, 15 3/4"x13". Depth, 4 1/2". Necessary wall opening, 14 3/4"x12". Screw hole centers, 3/4" from ends and sides. List Price, \$68.00.



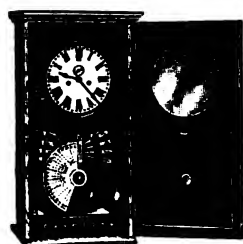
NO. 503M—VESTIBULE SET
Size, 7 3/4"x18 1/4". Depth, 3 3/4". Necessary wall opening, 5 3/4"x15 1/4". Screw hole centers, 1 1/4" from ends and sides. List Price, \$43.75.

"A.R.C." SYSTEMS

Telephone
Melrose 3337
Cable Address
Buzzers

Edwards & Co.

Incorporated
Manufacturing Electricians
140th & EXTERIOR STREETS
NEW YORK



NO. 75 TIME DETECTOR



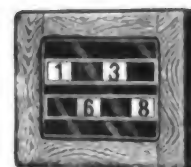
NO. 114
FIRE ALARM
ANNUNCIATOR



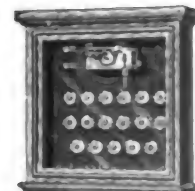
NO. 2 CARRIAGE-CALL ANNUNCIATOR



NO. 807
ANNUNCIATOR



NO. 802
ANNUNCIATOR



NO. 229
CONTACT BOX



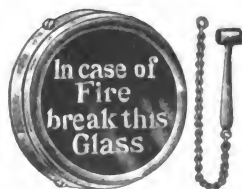
NO. 207 BELL-RINGING
TRANSFORMER



NO. 127
TOWER BELL STRIKER



NO. 275
SIGNAL BOX



NO. 77
BREAK GLASS STATION

PRODUCTS—ELECTRICAL SPECIALTIES; CARRIAGE-CALL ANNUNCIATORS; GENERAL ANNUNCIATORS; AUTOMATIC CLOCK BURGLAR ALARMS; PROGRAM CLOCKS; BELL STRIKERS; BUZZERS; DOOR OPENERS; FIRE-ALARM SIGNALS; WATCHMAN'S TIME DETECTORS and Various other Electrical Apparatus

CARRIAGE CALL ANNUNCIATORS—Adaptable for both day and night use. The lanterns are connected with miter gear, so that each side will operate in unison with the other. Can be furnished in hardwood, with outside ornamental-iron or copper case, perfectly weatherproof.

FIRE ALARM SYSTEMS—Our Central Station System is the simplest where telephone service is good and a low-cost fire alarm system is wanted. The No. 229 Fire Alarm Contact Box is generally located at Telephone Central Station, which is notified at time of fire. The operator starts the mechanism, which automatically sounds the fire number of the district of the town where fire is located, repeating same 3 to 6 times as desired on whistles, bells, etc., thus signaling the Fire Department. The fire alarm may be made by striking of church or tower bells, or bells in engine house, police headquarters, etc.

THE INTERIOR FIRE ALARM SYSTEM consists of simple "Break Glass" Boxes used in connection with fire alarm annunciators, also of constant ringing of bells at all annunciators and on

the various floors for general alarm. In case of fire it is only necessary to break the box glass. Adapted for use in all classes of buildings.

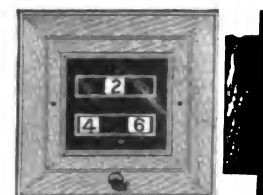
INDIVIDUAL SIGNAL SYSTEM—An absolute necessity for modern business methods. The equipment is usually operated by the telephone clerk. By working the mechanism in a No. 229 Contact Box, the number of the party wanted is sounded automatically on all signal devices throughout an establishment.

WATCHMAN'S TIME DETECTORS—In our Cadet and Dixie types we offer the most improved devices on the market. An experience of 40 years has enabled us to remedy any defects that may have existed and now to offer as the best the "Edwards" Watchman's Time Detectors. They record accurately and indelibly each visit of the watchman to each station. *Fire Insurance Companies make a large reduction in rates where "Edwards" Detectors are used.*

CLOCK BURGLAR ALARMS—They are automatic in operation, and are fitted with Constant Ringing Switch, Servant's Call Switch and latest scientific attachments.

We furnish Blue Prints showing all wire connections. Prices of our goods are furnished on application.

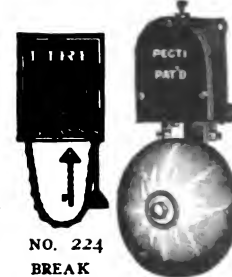
All orders through our Head Office and Distributing Agents will receive our immediate attention. Special and Standard Finishes—32 in number—are furnished as preferred.



NO. 806 ANNUNCIATOR



NO. 213
ANNUNCIATOR



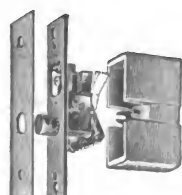
NO. 100
RECTI BELL



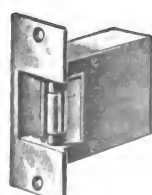
NO. 20
SINGLE STROKE BELL



NO. 6
BURGLAR ALARM



NO. 175
DOOR SWITCH



NO. 154
DOOR OPENER



NO. 101
PROGRAM CLOCK



NO. 62
MIDGET, JR., PUSH



NO. 118
FIRE ALARM BOX



NO. 140
E. M. BELL

"A.B.C." SYSTEMS

The E. Howard Clock Company

Established 1842

Manufacturers of Howard Clocks

31 NORTH STATE STREET
CHICAGO

373 WASHINGTON STREET
BOSTON

67 MAIDEN LANE
NEW YORK

PRODUCTS—HOWARD TOWER CLOCKS; HALL, OFFICE AND BANK CLOCKS; REGULATORS; SELF-WINDING REGULATORS AND ELECTRIC SECONDARY CLOCKS

TECHNICAL DESCRIPTION—In addition to our regular line we pay particular attention to the designing and manufacturing of fine clocks for Banking Rooms, Libraries, Churches and other interiors requiring clocks of special design in keeping with the other furniture and fixtures. Dials for these special clocks may be made of any material appropriate to the design and surroundings: Of fine marble or onyx; of metal finished in gold, silver or bronze; of glass or carved wood. The dials are made with figures of many patterns—regular Roman or Arabic, Old English Roman, Antique Arabic, and fancy figures of various designs. These figures are painted, or made in metal and attached, finished in gold, oxidized silver, bronze or gun metal.

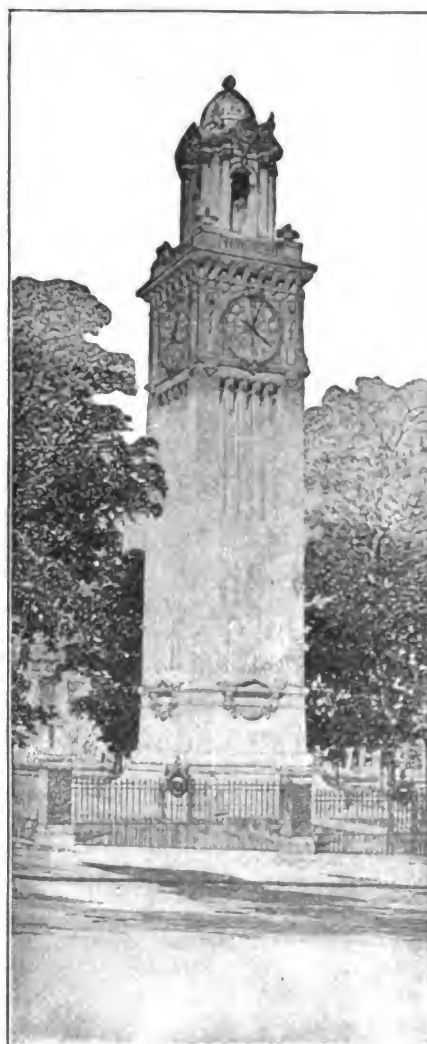
CLOCKS FOR GALLERIES, PARTITIONS, BANK VAULTS AND CEILINGS—These clocks are intended to stand upon a partition or hang from a ceiling, and can be arranged with either one or two dials. The latter arrangement gives the best satisfaction in rooms of great length, when placed upon a partition or hung from the ceiling at the middle of a room with a dial showing in each direction.

FOR LIBRARIES, CHURCHES, BANKING ROOMS—Dials are of fine Italian marble, with black painted Roman or Arabic figures.

Fancy marbles and a choice of many fine varieties of onyx made in a variety of patterns to order with special hands, figures and dots.

"HOWARD" TOWER CLOCKS—The scope of our ability to furnish special tower clocks is illustrated by the splendid large striking tower clock we recently installed for the Ayer Mills of the American Woolen Co., at Lawrence, Mass. This

clock has four 22-foot iron-and-glass dials, illuminated at night, and a 5000-pound bell. The clock movement is fitted with a minute control which will electrically operate as many secondary clocks as the plant may require. At present only twenty-four secondary clocks will be installed, but these will not vary more than 15 seconds per month. This accuracy has been accomplished by having the clock fitted with a Denison double three-legged gravity escapement and compensating pendulum.



CARRIE MEMORIAL CLOCK TOWER
Brown University Campus, Providence, R. I.
Guy Lowell, Architect

"HOWARD" ELECTRIC CLOCKS—The "HOWARD" Electric Clock system is an economical means for furnishing time to the occupants of large buildings. The system consists of a master clock arranged with electric contacts for controlling any number of secondary clocks desired. The master clock should be a tower-clock movement when a large number of secondary clocks are to be used. For a system consisting of a small number of secondary clocks a seconds pendulum regulator, of any of the many styles furnished by us, may be used. The secondary electric clocks may be arranged with dials of any size from 8 inches to 6 feet. These secondary clocks are made to match any details of furniture and fixtures of the building. The secondary clocks are provided with electrically-actuated escapement operated by electric circuits sent by the master clock.

DELIVERY AND INSTALLATION—We furnish experts to supervise delivery and installation in any part of the country.

SPECIFICATIONS. We maintain a specification department to furnish designs, specifications and cost for all special work.

HOW TO SPECIFY. Use the term "Howard Clock," and insert description if special design is wanted.

REFERENCES. Partial list where we have installed special designs: Gorham Mfg. Co., New York; Merchants National Bank of Baltimore; City Bank of Wheeling, W. Va.; New York Guaranty and Indemnity Co., New York; Normal College, New York; Western National Bank, New York.

"A.B.C." SYSTEMS

The Magneta Company, Inc.

Manufacturers of Electric Clocks and Time Stamps

1955 PARK AVENUE
NEW YORK, N. Y.

PRODUCTS—"MAGNETA" ELECTRICALLY-CONTROLLED CLOCK SYSTEM; ELECTRICAL TIME STAMP "MAGNETOGRAPH"

SYSTEM IN GENERAL—The "Magneta" Electric Clock System consists of a Master Clock, which actuates without batteries or contacts, any number of Secondary Clocks, and keeps them synchronized at all times.

OPERATION OF THE MAGNETA CLOCK SYSTEM—The Master Clock is provided with a MAGNETIC INDUCTOR of a special form, consisting of an iron core placed within a fixed coil, and so arranged with respect to a permanent magnet that the core becomes alternately magnetized and demagnetized by a semi-rotation; *once every minute*, the MASTER CLOCK actuates this INDUCTOR, thus *generating* a momentary current, which passes into the *circuit* of the SECONDARY CLOCKS, giving them an impulse synchronously with the movement of the inductor.

DETAILS—The Master Clock may be said to consist of three principal parts: 1. The clock movement proper, including pendulum. 2. The current producing Magneto apparatus. 3. The motor arrangement at the bottom of the case for the winding of the weight.

The clock movement proper and the Magneto generating apparatus are both operated by weight; the generating apparatus being released every minute by the clock movement. The weight is wound by hand or by an electric motor located at the bottom of the case; the motor deriving its source of power from the light line in the building.

Clocks are furnished with either oak, walnut or mahogany case.



MASTER CLOCK, TYPE E-321

ADVANTAGES OF THE SYSTEM—Batteries and contact points entirely superseded; therefore nothing to renew. No maintenance and repair costs of battery clocks. No supervision of any kind required, the entire system being self-acting. Highest time-keeping qualities secured by the extreme simplicity of construction.

Secondary clocks require neither setting, winding nor oiling. Secondary clocks show absolutely uniform time, as the cores cannot become magnetic, the operative current being alternating.

Large systems, and such having clocks located at considerable distance from the Master Clock, heretofore absolute failures, are a perfect success when employing "Magneta" clocks, as proven by numerous extensive "Magneta" systems in operation, some having more than five hundred secondary clocks.

MASTER CLOCK CAPACITIES—HAND WOUND (working period 8 days.) Type A, capable of driving 1-20 units. Type C, capable of driving 1-30 units. 1 unit equal to a secondary clock of 12-inch dial.

SELF-WINDING—Wound once every day by an electric motor outfit, as described. The clock can be wound by hand in case of interruption of the electric service.

"A.B.C." SYSTEMS

Type EA	32,	capable of driving	1-30 units
Type EA	45,	"	1-45 "
Type EA	100,	"	1-100 "
Type EA	200,	"	1-200 "
Type EA	300,	"	1-300 "
Type EA	500,	"	1-500 "

MARINE CLOCK—(Hand wound, working period 36 hours), for steamers and yachts—Type M, capable of driving 1-25 units.

PROGRAM SYSTEMS—One to four series. For ringing bells in any intervals. To be used for changing class, opening and closing periods, starting and stopping work, etc. This is simply an extra attachment to our Master Clocks.

SECONDARY CLOCKS—The Secondary clocks all have standard "Magneta" electrical movements, white enameled dials, balanced hands, stout glass fronts, and either wooden, metal or bronze cases, of any dial diameter desired.

RATINGS OF MASTER CLOCKS—Thirty units are usually connected to a series (maximum capacity 50 units). The unit is a secondary clock with a 12-in. diameter dial. Larger secondary clocks are graded as follows:

1-16"	dial clock equals	4 units.
1-20"	dial clock equals	4 units.
1-24"	dial clock equals	8 units.
1-28"	dial clock equals	8 units.
1-32"	dial clock equals	8 units.
1-36"	dial clock equals	8 units.
1-40"	dial clock equals	20 units.
1-48"	dial clock equals	20 units.
1-60"	dial clock equals	30 units.
1-70"	dial clock equals	40 units.

CONDUITING AND WIRING—A first-class wire system is a fundamental necessity for the perfect operation of a clock system. For this reason it is always advisable to have an independent conduit system for the clock wires. However, this is not absolutely necessary. The clock wire can be placed behind picture molding without any danger, owing to the very low current required for the operation of the Magneta Clocks. There is only one common return wire for one or more series. For the clock series, No. 18 heavy rubber-covered wire is used, and for the common return No. 16 heavy rubber-covered wire. All connections must be well soldered and taped.

ELECTRIC TIME STAMP "MAGNETOGRAPH"—An electrical device controlled from a master clock and operated by electricity obtained either from a direct continuous current or from batteries.

Its value as a time check on all transactions in commercial business is now generally recognized. Automatic in its action, as are the clocks of an electric system, the stamp changes its reading every minute. Printing wheels are continuously and positively locked, thus preventing any motion except by the electrical impulse, at the expiration of each minute, of the Master Clock. The year, month, date, hour, minute, A.M. and P.M., are printed on one straight line in plain legible types.

We cheerfully write specifications, furnish estimates, drawings, catalogs, etc.



ELECTRIC TIME STAMP
"MAGNETOGRAPH"

Seth Thomas Clock Company

Established 1813

Tower Clocks THOMASTON, CONN.

NEW YORK, N. Y.

Offices and Salesrooms
CHICAGO, ILL.

LONDON, ENG.

PRODUCT—Tower Clocks, of all Sizes and Designs, operated by Gravity; ELECTRIC TOWER CLOCKS, SELF-WINDING REGULATORS, etc., including all ELECTRIC DETAIL APPARATUS in connection

Also, MANTEL AND HALL CHIMING CLOCKS, BRONZE SETS AND EMPIRE GLASS CLOCKS

GENERAL DESCRIPTION—These clocks are of superior quality of material, workmanship and accuracy of time-keeping. They are constructed upon the rules of the highest authorities in horology. They have steel pinions and cut gearing and all appliances desirable to have a perfect clock.

Our Tower Clocks have received the highest Premiums and Awards at public fairs and exhibitions at home and abroad. At Paris they competed successfully with Clocks from the most celebrated makers in Europe.

The Hundreds that have been running for many years in all sections of the country have given uniform satisfaction. Many of them have made remarkable records as accurate time keepers.

No pains will be spared to maintain and increase the reputation of the SETH THOMAS CLOCKS. Every clock that leaves our factory is run and thoroughly tested, and is guaranteed to be free from original and mechanical defects for a period of five years, if properly cared for, and to run within a variation of 10 to 30 seconds a month.

We do not intend nor desire to offer the public Clocks which shall be LOWER PRICED, no matter at what sacrifice, than those of other makers, but we do intend, in the future as in the past, to produce Clocks which, quality and durability considered, shall be the CHEAPEST in the market.

TECHNICAL DETAILS—The accompanying illustration represents a Tower Clock in position inside the tower. In this case the movement is placed below the dials and the bell above. It makes the best arrangement to place the movements below the bell as there is less vibration in the lower part of the tower.

We can, however, make any arrangement the local conditions require; the dial and works may be in one compartment and the bell below, or the bell in the center, the dial above and the works below, etc.

STRIKE AND BELLS—Clocks can be made non-striking, when the cost of a bell is a consideration. Striking Clocks are made to strike hourly, or hour and quarter strikes.

To give effect and utility to a quarter-strike there should be at least two bells selected to harmonize, of sufficient difference in weight and tone to distinguish the quarter from the hour bell. Both bells may be used in the quarters, the larger one being struck for the hours.

With three bells more variety of tone can be obtained, assuming they be all used in the quarters, and four or five bells make additional notes possible. To ring the notes of the Cambridge or Westminster quarters requires four bells. A fifth bell may be added for the hour striking.

SILENCING DEVICES—The most perfected *Automatic* mechanism can be made to govern hours for striking. Hand devices may be used if there is no intention to stop the striking except for special occasions.

THE ANGELUS—This may be rung on a bell which is used for the hours also, but more frequently a separate bell is provided for the Angelus only. The mechanism in our clocks is made to meet these requirements if desired.

DIALS—To look well and show plainly, dials should be one foot in diameter for every ten feet of elevation and be set out flush with or close to the line of the building or tower. These proportions should be adhered to as nearly as possible.

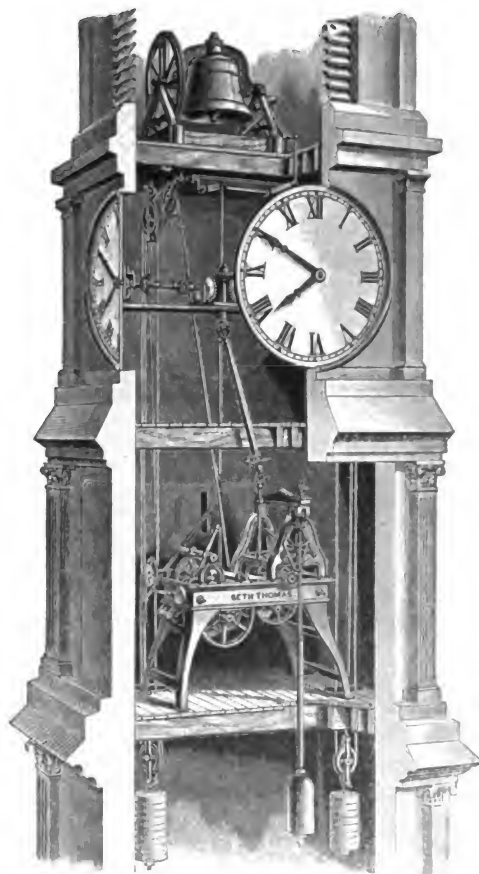
Dials should be built of well-seasoned wood, tongued and grooved, in two layers, with the grain crossed, and firmly nailed together, painted and smalted. We furnish cast metal numerals and dots to screw on, or will furnish dials complete, if desired.

IRON DIALS—Can be made of heavy galvanized iron over a wood backing. The numerals can be lettered on the dial, or the surface left plain and metal numerals and dots screwed on, as in the case of wood dials. We can furnish iron dials made in this way, of any size.

GLASS DIALS—In sizes up to five feet diameter we use glass dials in whole plates, having the numerals lettered on; but for any greater diameter it is best to use the sectional form.

The glass we furnish is the *best plate*, about three-eighths inch thick, ground on both sides, for both kinds.

We furnish ILLUMINATED DIALS for either gas or electric lighting, with automatic regulation.



VIEW OF CLOCK INSIDE TOWER

SKELETON METAL DIALS—These may be of varied design and made of different metals, according to cost. They should not be placed more than two or three inches from the face of the wall, as they require a backing to show to best advantage. The color of the dials and hands should be considered in connection with the color of the wall or background, with a view to obtaining the necessary contrast.

SECONDARY CLOCK SYSTEM—ELECTRIC CLOCK equipments of the type we manufacture will range all the way from one adapted to the small office building or factory, simply arranged in electrical connections, to one meeting the most exacting requirements in the distribution of time signals or time indication.

From the many designs we manufacture we can offer a Master Clock controlling all secondary apparatus as a unit, one suited to modest demands, or an instrument of precision for astronomical or laboratory work.

Any number of our secondaries can be operated from one of our master clocks, depending entirely on the method of distribution and the power supply.

These secondaries are regularly made and fitted for series operation, and where a large number are to be operated they are usually connected in groups or circuits of approximately twelve of the fourteen-inch size, or smaller, on a circuit. Each circuit is an independent section, operated from the master clock. These secondaries can be mounted in any form desired.

MASTER CLOCK—The master clock is an eight-day, weight-driven, seconds-beat movement with maintaining power, extra heavy brass plates finely polished and drilled (not pierced). The train has accurately cut gears and solid steel pinions accurately cut and polished, and all pivots are burnished.

When desired, we can furnish fitted to our master clock a winding alarm.

ESTIMATES—In writing for prices on tower clocks please state the diameter and number of dials required, the weight of the bell or bells (if to be a striking clock), the interior dimensions of the tower and amount of fall to be had for the weight. We will quote price for suitable clock, including hands and figures, adapted to dials of any diameter desired, and all the necessary trimmings, except the dial plates and weights (unless requested to include), boxed and delivered in New York City, or will contract for clock delivered and put up complete in the tower.

REFERENCES AND TESTIMONIALS—We have erected tower clocks in every part of the country. The unanimous verdict is: THEY RUN WELL, WEAR WELL, AND KEEP GOOD TIME.

"A.B.C." SYSTEMS

Below we print a few selected testimonials out of hundreds in our possession:



MASTER CLOCK



SECONDARY CLOCK

INTERCOLONIAL DEPOT, ST. JOHN, N. B.

March 13th, 1899.

GENTLEMEN: The Tower Clock we purchased from you in 1896, and put in the Intercolonial Depot, is giving good satisfaction in every way.
Yours,
FERGUSON & PAGE.

GEORGE J. GOULD, LAKEWOOD, N. J.

PRESIDENT'S OFFICE, THE MISSOURI PACIFIC RAILWAY CO.

New York, March 31, 1899.

SETH THOMAS CLOCK CO., 49 Maiden Lane, New York.
GENTLEMEN: I am directed to inform you that Mr. Gould is very well pleased with the Chiming Clock placed in the tower of Georgian Court Stable, Lakewood, N. J.

The Chimes are really beautiful in sound and deserve credit in doing their part toward enhancing the attractions of their surroundings.

I am, Yours truly,
T. DONALD TOO.

CITY HALL, FITZGERALD, GA.

"Jan. 18th, 1904: The Tower Clock bought of your Company last Spring has given excellent satisfaction. It was placed in the tower by myself and two others who had never before seen the works of a Tower Clock; nevertheless it is running right along and keeping correct time. They all set their watches by your clock in our City Hall.

(Signed) THOS. WILSON, Mayor."

FIFTH AVENUE HOTEL

MADISON SQUARE, NEW YORK.

"Jan. 20th, 1896: The works of our Street Clock have served two posts (made of wood) previous to the last one (of iron) furnished by your Company—all upon the same spot, and covering a period of thirty-six years. The clock has always performed to our satisfaction, and, apparently, is good for many years to come.
HITCHCOCK, DARLING & Co."

ST. GABRIEL'S CHURCH

NEW YORK, March 25th, 1899.

"I am happy to say that the 'Angelus Striking' tower clock placed by your firm in the tower of St. Gabriel's Church, more than a year ago, gives great satisfaction. Everyone is pleased with its regularity and strength of stroke.
Respectfully,
JOHN M. FARLEY, Rector."

[Extract from the TRENTON (N. J.) DAILY STATE GAZETTE, July 25th, 1881.]

Not satisfied with building and adorning this temple (St. Mary's Church), Father Smith has placed in its spire a chime of ten bells of unusual excellence, weighing 10,708 pounds, and a Clock, with illuminated dials, which has not a superior as a time-piece in this country. It was made by the Seth Thomas Clock Company, and was the official time-piece of the Paris Exposition.

COURT HOUSE, LA GRANGE, IND.

SAMUEL SHEPARDSON, Auditor of La Grange County, Ind., writes July, 1880: "The Tower Clock purchased of you for the Court House, and set up by Mr. A. S. Hotchkiss last September, gives complete satisfaction, running with a variation of only seven seconds per month. So far as the design and workmanship are concerned, I don't believe it is possible to get a more perfect machine than the Hotchkiss Tower Clock manufactured by you."

MUNICIPAL BUILDING, WINSTON, N. C.

"Dec. 15th, 1895: It affords me pleasure to state that the clock which you furnished for our Municipal Building, now in use for more than two years, has given entire satisfaction, and is regarded as one of the ornaments of the city. We can most cordially commend it to the public.
COL. J. W. ALSPAUGH."

COURT HOUSE, LOS ANGELES, CAL.

PROF. JOSEPH EMERSON writes July, 1882: "The quarter-striking Tower Clock which you set up, with chime of bells, for Beloit College, works with great perfection, and is highly prized by the College and throughout the community."

COURT HOUSE, ALBANY, ORE.

"SEPTEMBER 5, 1895: The large Seth Thomas Tower Clock (No. 8) which we put in our Los Angeles Court House, in March, 1893, gives entire satisfaction to every resident of our city. We have never heard a single complaint from any one; indeed, the record of the clock, which we take each week when we wind it, is so nearly perfect that we are justified in saying the clock runs closer to time than the guarantee given us on it. We recommend this style of clock to any city that may need a public clock, as one that will run well and is easy to keep in order.
MONTGOMERY BROS."

CLASSIFICATION PAGE OF
SECTION 35

Plumbing, Hot and Cold Water Supply, Drainage and Sanitation

(Cast-iron Water and Drainage Pipe see also Section 15C)

(Electric Sump and Sewage Ejectors see Section 30D)

(Pneumatic Sump and Sewage Ejectors see Section 28F)

(Steam Water Pumps and Sewage Pumps see Section 28B)

Section Synopsis

A. WATERPIPE AND FITTINGS. Iron, Lead, Lead-lined, Tin-lined, Block-tin, Brass, Nickel-plated, Solid White-metal, White-metal Steel-lined, Copper, Brass and Aluminum Pipe; Pipe Fittings and Fixtures; Faucets, Bibbs, Cocks, Valves, all styles and finishes; Pressure Regulators; Water Meters; Hydrants; Shower-Bath Equipments; Patent Supply and Waste Devices; Flush Tanks and Valves

B. PLUMBING FIXTURES. Solid-porcelain, Vitreous-china, Enameled-iron, Enameled-steel, etc., Fixtures; Planished Copper Baths and Sinks; Crockery, Reinforced-concrete, Cement-cast, Slate and Soapstone Sinks and Washtubs; Water Closet Seats; Bathroom Accessory Fittings; Bath Cabinets; Bar Fixture Specialties; Therapeutic Fixtures; Plumbers' Marble, Slate, Soapstone, Composition, Glass Work for lavatories, floor plates, stalls, partitions, etc.

Flush-tank Piping Fixtures; Fixture Legs and Brackets; Water-Closet Seat Hinges; Sink Backs; Washtub Covers, Drain Boards, etc.

C. HOT WATER SUPPLY. Kitchen Circulating Boilers, copper and galvanized-iron; Special-design Kitchen Boilers; Instantaneous Gas Water-Heaters and Attachments; Coal-Boiler and Storage Tank Hot-Water Heaters

Steam-Coil and Steam-Tube Direct and Combination Tank Heaters; Combination Storage-Tank and Kitchen Boiler Systems; Automatic Attachments; Thermostats

D. DRAINAGE WORK. Cast-iron, Wrought-iron, Lead and Brass Pipe and Fittings, for soil, waste, vent, roof and ground-drainage work; Traps; Gutters and Leaders; Cesspools; Catch-Basins; Fresh-air Valves; Cellar Drainers; Special Stable, Abattoir and Garage Drains and Cesspools (Catch-basins)

E. Sanitary Design and Apparatus; Inodorous Evacuators; Garbage Incinerators and Destructors; Hospital Disinfecting Apparatus; Portable Fumigators; Clothing and Bedding Disinfectors; Sterilizers; Special Suburban Drainage Systems; Chemical Disposal Works

F. WATER SUPPLY. Water Tanks and Vats, wood and iron; Water Towers; Hand Pumps, Chain Bucket Pumps, Electric, Gas, Gasoline, Hot Air Pumps, Windmills; Artesian Wells; Water Lifts; Deep-well Working Heads; Hydraulic Rams; Pneumatic Outfits; Independent Water Supply Systems; Wood Mains

G. Water Filtration and Aeration; Plants, and Portable-connected Filters; Alum Attachments; Water Still; Water Softeners

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX		REGULAR CLASSIFICATION	
A	1	Faucets, bibbs, cocks, combination fittings, standard, ground compression, fuller, self-closing, etc.	
	2	Flush-tank ball cocks	
	3	Flush-tanks, elevated, low-down	
	4	Flush valves	
	5	Hydrants, yard	
	6	Pressure regulators, water	
	7	Shower bath supply equipment, mixers, sprays, etc.	
	8	Street-supply box cocks	
	9	Street-washer box cocks	
	10	Valves, globe, gate, wheel, key	
	11	Water meters, fish traps	
		Waterpipe and fittings:—	
	12	Aluminum, brass, plain, nickel-plated, copper	
	13	Block-tin pipe, beer pumps, etc.	
	14	Iron, welded, cast	
	15	Iron, lead-lined, tin-lined	
	16	Lead	
	17	Lead, tin-lined	
	18	Solid white metal and steel-lined	
B	30	Acidproof tanks, porcelain, slate	
	31	Bar fixture specialties	
		Bathroom and toilet room accessory fittings and furnishings:—	
	32	Bath seats, towel racks, rubber curtains, sponge and soap holders, porcelain toilet tables and stools, etc.	
	33	Bathroom cabinets, Turkish bath	
	34	Black and galvanized iron sinks	
	35	Cement sinks and tubs	
	36	Copper baths, sinks, tinned, bright	
	37	Drinking fountains	
		Drinking troughs:—	
	38	Animals	
	39	Persons	
	40	German silver sinks	
	41	Glazed earthenware sinks, tubs	
		Manicure tables	
	42	Plumbing accessory fittings:—	
	43	Drain boards, fixture legs, sink and tank brackets, tank flush pipe, sinkbacks, wash tub covers, w. c. seat hinges, etc.	
		Plumbing fixtures, bathtubs, water closets and tanks, closet and tank combinations, floor slabs, sinks, lavatories, tubs, urinals, bidets, shower baths, etc.:—	
	44	Enameled-iron, full line	
	45	Enameled seamless steel, full line	
	46	Solid-porcelain, standard, full line	
	47	Vitreous-china, full line	
		Plumbers' lavatory slabs, partitions, floor plates, stalls:—	
	48	Glass	
	49	Marble, white, colored	
	50	Slate	
	51	Soapstone	
	52	Shampoo tables	
	53	Slate sinks, tubs, urinal stalls, sink and lavatory tops, etc.	
	54	Soapstone sinks, tubs, urinal stalls	
	55	Space-saving combination fixtures, washtubs, baths, sinks	
	56	Spitting receptors	
	57	Supply pipe fittings for fixtures	
	58	Therapeutic fixtures	
	59	Toilet-paper cabinets	
	60	Water closet seats, patent joints, special materials and finishes	
	61	White bone china bathroom accessories	
	62	White vitreous china bathroom accessories	
	63	White metal sinks	
	64	Zinc sinks	

C	80	Hot water supply:—	170	Water tank towers, wood, steel	<p>"Palette," bathroom specialties, Cat. B 3 "Peerless," kitchen boilers and gas water heaters, Cat. C 3 "Perfection," porcelain plumbing fixtures, Cat. B 7 "Premier," bathtub, Cat. B 8 "Stewart," tank heaters, S. 29 D, Cat. 2 "Trident," line of water meters, Cat. A 4</p>																																																																																																		
	81	Automatic gas attachments	171	Windmills, water pump and tank																																																																																																			
		Automatic steam water heaters, cylinder, low or high pressure	172	Wood water mains, creosoted																																																																																																			
	82	Coal or gas-boiler and storage-tank hot-water heaters	G	Water filtration and aeration:—																																																																																																			
	83	Combination storage-tank and kitchen-boiler system		Filtering materials																																																																																																			
	84	Instantaneous gas water heaters		Plants, suburban, institution																																																																																																			
	85	Low-pressure steam-tube water heaters		Portable connected (sand and charcoal) filters, various designs																																																																																																			
	86	Thermostats and thermostatic valves		Set filters																																																																																																			
		Kitchen circulating boilers:—		Water softeners, alum, etc., treatment, domestic use																																																																																																			
	87	Copper, standard type		Water softeners, boilers, tanks, etc.																																																																																																			
	88	Galvanized iron, steel		Water stills and aerators																																																																																																			
	89	Patent gas or gasoline water-heating																																																																																																					
90	Special sediment-waste	SPECIAL CLASSIFICATION Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.																																																																																																					
91	Steam-coil																																																																																																						
92	Steam, coil or tube h.p., direct and combination tank heaters and boilers																																																																																																						
D	105	Brass ferrules, nipples, caps	201	Architectural iron (S. 15)	TRADE NAMES AND BRANDS <p>"Anchor," vitreous china line of fixtures, } Cat. B 5 "Ariston," water closets, } "Bowden," water filters, } "Eclipse," stone filters, } Cat. G 1 "Monitor," stone filters, } "Stewart," stone filters, } "Codru," syphon water closet, Cat. B 9 "Crest," flush valves, } Cat. A 2 "Pavalco," valves, } "Crown," water meter, } "Empire," water meter, } Cat. A 3 "Gem," water meter, } "Nash," water meter, } "Premier," water meter, } "Dehns Acme," sanitary plumbing and drainage specialties, } Cat. D 1 "Peerless," water softener, floor drains, } "Kompost," bricks, water softener, } "Donovan," brass w. c. floor flange, } "Ideal," solid porcelain line of fixtures, } Cat. B 1 "Impervio," vitreous china line of fixtures, } "Si-wel-clo" vitreous china water-closet, } "Economy," pumping equipment, Cat. F 3 "Keepkleen," kitchen boiler, copper, Cat. C 1 "Minneapolis," thermostatic regulator, S. 29 C, Cat. 2 "Model," tank heater, } S. 29 B, Cat. 2 "Richmond," tank heater, } "Omala," water closet seats, Cat. B 2 "Paddock," water filter, } Cat. G 2 "Paddock," valve, }</p>																																																																																																		
	106	Drainage and vent work:—	202	Bathroom furniture (S. 43 A)																																																																																																			
	107	Back-water valves	203	Bathroom mirrors (S. 43 A)																																																																																																			
		Cast-iron cesspools, catch-basins, bell traps	204	Builders' iron work and structural hardware (S. 18)																																																																																																			
	108	Cast-iron gutters and leaders	205	Came lead and ornaments (S. 20 B)																																																																																																			
	109	Cellar drainers, hydraulic ejectors	206	Coal chutes (S. 16)																																																																																																			
	110	Fresh-air inlet valves	207	Derricks, cranes, etc. (S. 3)																																																																																																			
	111	Fresh-air inlet street boxes	208	Electric pumps, all kinds (S. 30 D)																																																																																																			
	112	Grease traps	209	Electric fire pumps (S. 17 B)																																																																																																			
	113	Patent sewage ejectors, electric, pneumatic, steam, hydraulic	210	Gasoline meters (S. 37)																																																																																																			
		Pipe, fittings, traps, clean-outs, etc.:—	211	Manhole and coalhole frames and covers (S. 15 C)																																																																																																			
	114	Brass, plain, nickel-plated	212	Medicine cabinets, wood (S. 43 A)																																																																																																			
115	Cast-iron	213	Medicine cabinets, metal (S. 40 A)																																																																																																				
116	Closed-end adjustable iron closet bends	214	Sash weights, lead (S. 19 A)																																																																																																				
117	Copper seamless tubing	215	Sheet lead (S. 16 A)																																																																																																				
118	Floor flange, w.c. patent, brass	216	Steam pumps, all kinds (S. 28 B)																																																																																																				
119	Lead waste pipe and w.c. bends	217	Steam sump pumps (S. 28 B)																																																																																																				
120	Special design pipe and fittings	218	Steel smoke stacks, standpipe, tanks, etc. (S. 14)																																																																																																				
121	Tin tubing	219	Structural plate, full line (S. 27 B)																																																																																																				
122	Wrought-iron pipe	220	Structural steel, roof truss, bridges, etc. (S. 14)																																																																																																				
123	Stable, abattoir and garage gutters and cesspools																																																																																																						
E	Sanitation:—	Manufacturers having Catalog data in this Section																																																																																																					
	135					Chemical disposal works, suburbs, institutions	<table><thead><tr><th rowspan="2">Cat. No.</th><th rowspan="2">Manufacturers having Catalog data in this Section</th><th colspan="5">Sub-Index Numbers</th></tr><tr><th>1 to 50</th><th>51 to 100</th><th>101 to 150</th><th>151 to 200</th><th>201 to 250</th></tr></thead><tbody><tr><td>B 7</td><td>American Porcelain Co. New Brighton, Pa.</td><td>30 37 43 46</td><td></td><td></td><td></td><td></td></tr><tr><td>G 2</td><td>Atlantic Filter Company Buffalo, N. Y.</td><td>10</td><td></td><td></td><td>187 188</td><td></td></tr><tr><td>C 1</td><td>Badger & Sons Co., E. B. Boston, Mass.</td><td>36 40</td><td>63 64 67 91 92</td><td></td><td></td><td></td></tr><tr><td>B 9</td><td>Cochran, Drugan & Co. Trenton, N. J.</td><td>46 47</td><td></td><td></td><td></td><td></td></tr><tr><td>D 1</td><td>Compound Injector & Specialty Co. Chicago, Ill.</td><td></td><td></td><td>107 112 116 123</td><td>189 190</td><td></td></tr><tr><td>C 2</td><td>Dahlquist Mfg. Co. South Boston, Mass.</td><td></td><td>87 91 92</td><td></td><td></td><td></td></tr><tr><td>F 4</td><td>Des Moines Bridge & Iron Co. Pittsburgh, Pa.</td><td></td><td></td><td></td><td>152 155 167 170 201 206 207 218 220</td><td></td></tr><tr><td>F 2</td><td>Douglas, W. & B. Middletown, Conn.</td><td></td><td></td><td>150</td><td>161 162 164 166 168 169 185 186</td><td>208 216</td></tr><tr><td>B 2</td><td>Galard Co., The... Newark, N. J.</td><td>3 32</td><td>60</td><td></td><td></td><td>202 203 212</td></tr><tr><td>C 4</td><td>Hoffman Heater Co., The Lorain, Ohio</td><td></td><td>82 84 86</td><td></td><td></td><td></td></tr><tr><td>G 4</td><td>Hygeia Filter Co. Detroit, Mich.</td><td></td><td></td><td></td><td>187 188 189</td><td></td></tr><tr><td>G 3</td><td>Loomis - Manning Filter Distributing Co. Philadelphia, Pa.</td><td></td><td></td><td>140</td><td>185 186 187 188</td><td></td></tr></tbody></table>	Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	B 7	American Porcelain Co. New Brighton, Pa.	30 37 43 46					G 2	Atlantic Filter Company Buffalo, N. Y.	10			187 188		C 1	Badger & Sons Co., E. B. Boston, Mass.	36 40	63 64 67 91 92				B 9	Cochran, Drugan & Co. Trenton, N. J.	46 47					D 1	Compound Injector & Specialty Co. Chicago, Ill.			107 112 116 123	189 190		C 2	Dahlquist Mfg. Co. South Boston, Mass.		87 91 92				F 4	Des Moines Bridge & Iron Co. Pittsburgh, Pa.				152 155 167 170 201 206 207 218 220		F 2	Douglas, W. & B. Middletown, Conn.			150	161 162 164 166 168 169 185 186	208 216	B 2	Galard Co., The... Newark, N. J.	3 32	60			202 203 212	C 4	Hoffman Heater Co., The Lorain, Ohio		82 84 86				G 4	Hygeia Filter Co. Detroit, Mich.				187 188 189		G 3	Loomis - Manning Filter Distributing Co. Philadelphia, Pa.			140	185 186 187 188	
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136	Disinfecting apparatus, clothing, bedding																																																																																																						
137	Fumigators, portable disinfectors																																																																																																						
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139	Inodorous evacuators, cesspool, privy vault																																																																																																						
140	Sterilizers, water, milk																																																																																																						
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151	Hydraulic rams																																																																																																						
152	Independent water supply systems, apparatus and engineering, gravity or pneumatic																																																																																																						
	Water supply pumps:—																																																																																																						
153	Belt-driven																																																																																																						
154	Centrifugal, all kinds																																																																																																						
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157	Gas-engine																																																																																																						
158	Gasoline-engine																																																																																																						
159	Hand-power																																																																																																						
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161	Impeller																																																																																																						
162	Petroleum-engine																																																																																																						
163	Steam-driven																																																																																																						
164	Turbines																																																																																																						
165	Water lifts																																																																																																						
166	Working heads, deep well																																																																																																						
	Water tanks and vats:—																																																																																																						
167	Iron, steel																																																																																																						
168	Water stand pipes																																																																																																						
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		1 to 50	51 to 100	101 to 150	151 to 200	201 to 250							1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
B 5	Maddock's Sons Co., Thos. Trenton, N. J.	3 32 37 42 43 47	61 62				Blaisdell Machinery Co. S. 38, Cat. 4 (Steam and pneumatic sewage ejectors)					Abingdon Seat & Tank Mfg. Co. Abingdon, Ill.	3	60			
A 1	National Lead Co. New York, N. Y.	13 16 17		119 121		205 214 215	Bramhall Deane Co. S. 36 A, Cat. 2 (Kitchen boilers and water heaters)					Acme Water Storage & Construction Co. New York, N. Y.				151 152 165	
A 3	National Meter Co. New York, N. Y.	11					(Sterilizers, water, milk)					Advance Mfg. Co. Erie, Pa.		114			
A 4	Neptune Meter Co. New York, N. Y.	11				210	Canton Foundry and Machine Co. S. 37, Cat. 1 (Catch basins, gutter boxes, etc.)					Air Tight Steel Tank Co. Pittsburgh, Pa.				167	
A 2	Pasman Valve Co. Jersey City, N. J.	4					Electric Heat Regulator Co. S. 29 C, Cat. 2 (Thermostatic regulator)					Alberene Stone Co. New York, N. Y.		54			
C 3	Peerless Heater Co. Chicago, Ill.		84 89				Excelsior Slate Co. S. 27 B, Cat. 1 (Plumbers' slate work)					American Cast Iron Pipe Co. Birmingham, Ala.	14		115		
G 1	Scaife & Sons Co., Wm. B. Pittsburgh, Pa.				185 187 188		Fuller & Warren Co. S. 29 D, Cat. 3 (Water heaters, domestic supply)					American Foundry & Mfg. Co. St. Louis, Mo.	1		114 115		
B 3	Searls Mfg. Co. Newark, N. J.	32	59			213	Gardner & Co., R. H. S. 19 A, Cat. 6 (Standards for lavatories, marble and slate partitions)					American Foundry & Pipe Co. Penn Station, Pa.			114 115 117		
F 3	Thomas & Smith, Inc. Chicago, Ill.			109 113	153 154 156 163 166	209 217	Johns-Manville Co., H. W. S. 26 B, Cat. 8 (Sanitor water closet seats)					American Pin Co. Waterbury, Conn.	4	57	114		
B 1	Trenton Potteries Co. Trenton, N. J.	3 32 37 38 39 42 43 46 47	52 56 61 62	118			Kelly & Jones Co. S. 28 C, Cat. 2 (Valves of all kinds)					American Ring Co. New York, N. Y.	32				
B 8	Union Sanitary Mfg. Co. Noblesville, Ind.	3 38 43 44		112			McCrum-Howell Co. S. 29 B, Cat. 2 (Hot water tank heater)					American Sanitary Works. New York, N. Y.	2 3 47	60			
D 2	Wade Iron Sanitary Mfg. Co. Chicago, Ill.			106 107 112 120		211	Nelson Valve Co. S. 28 C, Cat. 1 (Valves of all kinds)					American Spiral Pipe Works. Chicago, Ill.	10 14				
F 1	Weber Subterranean Pump Co. New York, N. Y.				152 156		Pierce, Butler & Pierce Mfg. Co. S. 29 B, Cat. 5 (Tank, laundry and fire dept. heaters)					American Steam Pump Co. Battle Creek, Mich.				163	
B 6	Wheeling Sanitary Mfg. Co. Wheeling, W. Va.	2 4 37 43 44 46 47					Shirley Boiler & Radiator Co. S. 29 B, Cat. 7 (Tank heaters, stores)					American Sterilizer Co. Erie, Pa.			138 140	186 187	
B 4	Woodley Slate Co. Bangor, Pa.	30 50	53			219	Slatington-Bangor Slate Syndicate S. 27 A, Cat. 1 (Slate sinks)					A. P. W. Paper Co. Albany, N. Y.		59			
							York Manufacturing Co. S. 32 A, Cat. 4 (Water stills)					Ashton Valve Co. Boston, Mass.	10				
												Bailey-Farrell Mfg. Co. Pittsburgh, Pa.	1 2 3 4 7 12 14 32 34 37 43 44 45 46 47 49 50	53 60 61 62	112 114 115 116 118 119 120 122		
												Bastian-Morley Co. Chicago, Ill.			80 82 83 84 89		
												Barnes Mfg. Co. Mansfield, Ohio	44				
												Bellman, W. E. Bangor, N. Y.		81 82			
												Bone Water Heater Co. Bangor, Pa.		82 83 84 89			
												Bulley Co. Bangor, N. Y.	47				
															115 122		

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Benton Valve Co. New York, N. Y.	10					Clow & Sons, Jas. B. Chicago, Ill.	1 2 3 4 7 12 14 32 33 34 35 37 40 41 42 43 44 46 47 48 49 50	51 52 53 58 60 64 80 84 86	109 112 114 115 116 118 119 120 122		Dow Pumping Engine Co., George E. San Francisco, Cal.				156		
Best Mfg. Co. Pittsburgh, Pa.	10 12 14		115 119								Du Bois Iron Works. Du Bois, Pa.				156		
Bishop-Babcock-Becker Co. Cleveland, Ohio				156 165							Ebinger Sanitary Mfg. Co., D. A. Columbus, Ohio	37 44					
Boston Mirror Co. Boston, Mass.	32										Edwardsville Brass Co. Edwardsville, Ill.			114			
Bowser & Co., S. P. Port Wayne, Ind.				167 170							Eljer Mfg. Co. Cameron, W. Va.	3 4 47					
Boynnton, Inc., C. W. Sewaren, N. J.			141								Enameled Tank Co. Kalamazoo, Mich.	3					
Braender, Philip New York, N. Y.			109			Columbus Brass Co. Columbus, Ohio	2 3 10 32	60			Englehard & Sons, Frank. Springfield, Mass.	2					
Buckeye Tank and Seat Co. Canton, Ohio	3 10	60				Colwell Lead Co. New York, N. Y.	4 7 32 37 44 46 47	51 55	115 118 119 120		Erwin & Co. Chicago, Ill.				109 113 152 156 157 160 165		
Buckeye Pump & Co. Columbus, Ohio	6										Essex Foundry. Newark, N. J.	14 16					
Buffalo Specialty Co. Buffalo, N. Y.	32					Corcoran, A. J. New York, N. Y.				152 169 170 171	d'Este, Julian Boston, Mass.			109			
Byers Co., A. M. Pittsburgh, Pa.			122			Cosgrove-Cosgrove Mfg. Co. Philadelphia, Pa.		57	118 119		Eustis Mfg. Co., J. P. Boston, Mass.	7 32 33					
Cahill Iron Works Chattanooga, Tenn.	3 42					Cowan Mfg. Co. Pittsburgh, Pa.		60			Evans Marble Co. Baltimore, Md.	49					
Caldwell Co., W. E. Louisville, Ky.				167 169 170		Craft, Jesse New York, N. Y.	35				Excelvalve Co. New York, N. Y.	1 4					
Celluvarno Co. Newark, N. J.	4 12 14	60				Cragin Garbage Crematory Co. Chicago, Ill.			138		Crampton-Farley Brass Co. Kansas City, Mo.	1 10		105			
Century Mfg. Co. Eastwood, N. Y.	3 47	80				Crane Co. Chicago, Ill.	1 2 3 4 7 12 14 32 33 34 35 37 40 41 42 43 44 46 47 48 49 50	51 52 53 58 60 64 80 84 86	109 112 114 115 116 118 119 120 122		Fairbanks, Morse & Co. Chicago, Ill.			152 165			
Central Brass Mfg. Co. Cleveland, Ohio	1										Federal-Huber Co. Chicago, Ill.	1 2 3 7 32 44 46 47	57 58 60	105			
Central Closet Mfg. Co. Kokomo, Ind.	1	60									Findeisen & Kropf Mfg. Co. Chicago, Ill.	3	60				
Central Specialty Mfg. Co. Chicago, Ill.	7 12 33										Fleck Bros. Co. Philadelphia, Pa.	32 37 46 47					
Chadwick-Boston Lead Co. Boston, Mass.	13 17 21										Flint & Walling Mfg. Co. Kendallville, Ind.				152 170		
Charlotte Pipe & Foundry Co. Charlotte, N. C.			122			Day-Ward Co. Warren, Ohio	44				Florentine Pottery Co. Chillicothe, Ohio	47					
Chicago Bridge & Iron Works Chicago, Ill.			117 121			Deming Co. Salem, Ohio				159	Forsyth Mfg. Co. Buffalo, N. Y.	32					
Chicago Faucet Co. Chicago, Ill.						Detroit Bath Tub & Brass Mfg. Co. Detroit, Mich.	45				Ford's Terra Cotta & Pot tery Works New York, N. Y.	46					
Chicago Granite Mfg. Co. Chicago, Ill.						Donaldson Iron Co. Omaha, Neb.	14				Fort Wayne Eng. & Mfg. Co. Fort Wayne, Ind.			156	151 152 156 158 165		
Chicago Pump Co. Chicago, Ill.						Douglas Co., John Cincinnati, Ohio	1 2 3 4 7 12 14 32 33 34 35 37 40 41 42 43 44 46 47 48 49 50	51 52 53 58 60 64 80 84 86	109 112 114 115 116 118 119 120 122		Freeman & Sons Mfg. Co., S. Racine, Wis.			171			
Church Mfg. Co., C. F. Holyoke, Mass.											Frost Mfg. Co. Kenosha, Wis.	2 4					
Clarke, Robert Brooklyn, N. Y.											Garden City Plating & Mfg. Co. Chicago, Ill.	32					
Cleveland Faucet Co. Cleveland, Ohio											Gaylord Sanitary Mfg. Co. Rochester, N. Y.	2 3 47					
Cleveland Flush Meter Co. Cleveland, Ohio											Glaedding, M. Bean & Co. San Francisco, Cal.	41					
Climax Sanitary Co. Detroit, Mich.											Glanmorgan Pipe & Foundry Co. Levensham, Va.	10 14					

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Glauber Brass Mfg. Co.... Cleveland, Ohio	1 3 4 12		114			Illinois Malleable Iron Co... Chicago, Ill.	2 4 5 8 9	82 83	111 115			McDonald Mfg. Co., A. Y... Dubuque, Iowa	1 2 3 4 5 6 7 8 9 10 37 43 44 46 47	53 57 60	118		
Glen Mfg. Co..... St. Charles, Ill.	34		105 107 108 111 115 123			Illinois Pump & Brass Co... Peoria, Ill.			165								
Graham Chemical Pottery Works, Charles Brooklyn, N. Y.	41					Imco Mfg. Co..... New York, N. Y.	7 32 43										
Graver Tank Works, William East Chicago, Ind.				167 170 189		Imperial Brass Mfg. Co.... Pittsburgh, Pa.	4 7 10					McInnes & Co., Charles E... Philadelphia, Pa.			114 117		
Great Western Pottery Co... Kokomo, Ind.	3 47					Instantaneous Water Heat- ing Co. Kalamazoo, Mich.		84				McNab & Harlin Mfg. Co... New York, N. Y.	1 10 12 14		105 114		
Hass Co., Philip..... Dayton, Ohio	4					International Filter Co.... Chicago, Ill.			187			McMann & Taylor..... New York, N. Y.	1 5 6 8 9 10 12 14		105 114 122		
Haines, Jones & Cadbury Co. Philadelphia, Pa.	1 2 3 4 7 12 14 32 33 34 35 37 40 41 42 43 44 46 47 48 49 50	51 52 53 58 60 64 80 84 86	109 112 114 115 116 118 119 120 122			Iron City Sanitary Mfg. Co. Pittsburgh, Pa.	44										
						I. X. L. Pump & Mfg. Co... Philadelphia, Pa.	3 6 10	57	109 113	165							
						Judd-Winslow Co..... Muskegon, Mich.		60				McVay & Walker..... Braddock, Pa.	44				
						Kelly & Bros., Thos. W.... Chicago, Ill.	1					Maneely, John..... Philadelphia, Pa.	10				
						Kemp Mfg. Co., C. M..... Baltimore, Md.	5 9	80		157		Mass. Sanitary Appliance Co. Springfield, Mass.	1 37				
						Kewanee Water Supply Co. Kewanee, Ill.				151 152 156 165		Massillon Iron & Steel Co.. Massillon, Ohio	14		115		
						Kittoe Tank & Boiler Co... Canton, Ohio				167		Merritt & Co..... Camden, N. J.			109 113		
						Kohler Sons Co., J. M..... Sheboygan, Wis.	44					Milwaukee Brass Mfg. Co... Milwaukee, Wis.	1				
						Kny-Sheerer Co..... New York, N. Y.		58	136 140			Modern Water Supply Co... Pittsburgh, Pa.				152	
						Krauss & Sons, Charles.... Indianapolis, Ind.				151		Monarch Brass Co..... Cleveland, Ohio			114 119		
						Lalanc & Grosjean Mfg. Co. New York, N. Y.	1 2 3 4		105			Monarch Valve & Mfg. Co... Springfield, Mass.	10				
						Leader Iron Works..... Decatur, Ill.				152		Monument Pottery Co..... Trenton, N. J.	3 32 37 42 43 46 47	52			
						Leclaire Mfg. Co..... Edwardsville, Ill.	2 3	60									
						Lipp Co., Louis..... Cincinnati, Ohio	2 3 4 7 32 43 44 47	57 60				Moriarty, Gilbert J..... Boston, Mass.		87			
						Locke Regulator Co..... Salem, Mass.	6					Mott Iron Works, J. L..... New York, N. Y.	1 2 3 4 7 12 14 32 33 34 35 37 40 41 42 43 44 46 47 48 49 50	51 52 53 58 60 64 80 84 86	109 112 114 115 116 118 119 120 122		
						Los Angeles Mfg. Co..... Los Angeles, Cal.	34	88	111 150	152 166 167 170							
						Louden Machinery Co..... Fairfield, Iowa	10 14 15 16					Mueller Mfg. Co., H..... Decatur, Ill.	1 4 7 10 32	57	114		
						Lunt-Moss Co..... Boston, Mass.				151 152 156 165							
						Lynn-Superior Co..... Cincinnati, Ohio				186		National Incinerator Co.... New York, N. Y.			138		
						McCumbridge-Cooper Co... Philadelphia, Pa.	1 4 7 10 32 37 41 42 43 44 46 47	59 60 61 62	118			National Brass & Copper Tube Co. New York, N. Y.	12				
												National Foundry Co..... Brooklyn, N. Y.	34		111 115		
												National Tube Co..... Pittsburgh, Pa.	8 9 10 14	57 92	117		
												Nelson Marble Co., N. O.... Edwardsville, Ill.	49 50	53 54			

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250		1 to 50	51 to 100	101 to 150	151 to 200	201 to 250		1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
Never-Split Seat Co. Evansville, Ind.		60				Sanitas Mfg. Co. Boston, Mass.	1 3 32 37 42 43 44 46 47	52 60 62	112 114 118 120			U. S. Incinerator Co. Buffalo, N. Y.			138		
New York Slate Works. New York, N. Y.	50	53										U. S. Sanitary Mfg. Co. Pittsburgh, Pa.	44				
Novelty Mfg. Co. Waterbury, Conn.	32											Van Arnam Mfg. Co. Fort Wayne, Ind.	3 4	60			
Ohio Pump & Brass Co. Columbus, Ohio				152 165		Sanitary Mfg. Co. Hamilton, Ohio	2 3 4 47	60				Vitrolite Co. Parkersburgh, W. Va.	32 48				
Olmstead-Thomson Mfg. Co. New Britain, Conn.	3 43	60										Vogel Co., Joseph A. Wilmington, Del.	3 44				
Opalite Tile Co. Monaca, Pa.	48					Schouler Cement Construc- tion Co. Newark, N. J.	13 14 35					Walch & Wyeth. Chicago, Ill.	6 10				
Oregon Iron & Steel Co. Portland, Ore.	14		115			Scott Paper Co. Philadelphia, Pa.	32	59				Walworth Mfg. Co. Boston, Mass.	1 5 10 14		151		
Otto Gas Engine Works. Philadelphia, Pa.				157 158 162 166		Seamless Steel Mfg. Co. Detroit, Mich.	45					Washington Pipe & Foundry Co. Tacoma, Wash.				172	
Parrott Heater Sales Co. Dayton, Ohio		84				Selby Smelting & Lead Co. San Francisco, Cal.	15					Watson & McDaniel Co. Philadelphia, Pa.	6				
Peck Brothers & Co. New Haven, Conn.	1 3 4 7 12 12 36 37 40 42 43 44 46 47	55 60	112 118 120			Shipway & Bro., John H. New York, N. Y.	49					Waterite Drain Co. New York, N. Y.			107 111		
Peerless Tank & Seat Works Evansville, Ind.	2 3 4	60				Sloan Valve Co. Chicago, Ill.	4					Weiskittel & Son, A. Baltimore, Md.	7 44				
Pemberton Injector Co. Detroit, Mich.			109			Smith Mfg. Co., E. C. Chicago, Ill.	32 33					Wendnagel & Co. Chicago, Ill.				169 170	
Perfection Tank & Seat Co. Syracuse, N. Y.	3	60				Speakman Supply & Pipe Co. Wilmington, Del.	1 7 32 37 43		114 118			Wesley, Charles. Chicago, Ill.	34 35				
Pfau Mfg. Co. Cincinnati, Ohio	2 3 4	60				Standard Pump & Engine Co. Cleveland, Ohio				152 156 157 158		Wheeling Steel & Iron Co. Wheeling, West Va.	14				
Phoenix Soapstone Co. New York, N. Y.		51 54				Standard Sanitary Mfg. Co. Pittsburgh, Pa.	1 2 3 4 7 12 31 32 37 38 39 42 43 44	52 55 60	105 112 114 118 120			White Steel Sanitary Furni- ture Co. Grand Rapids, Mich.	32 33				
Pillsbury & Baldwin Co. Barton, Vermont	3	60										Whitlock Coil Pipe Co. Hartford, Conn.			119		
Pittsburgh Gauge & Supply Co. Pittsburgh, Pa.	1 4		114			Standard Tank & Seat Co. Camden, N. J.	2 3 4 12 33	60				Wilks Mfg. Co. Chicago, Ill.		80 82 86	136 167		
Pittsburgh Water Heater Co. Pittsburgh, Pa.		80 81 84 86 89										Wilson-Snyder Mfg. Co. Pittsburgh, Pa.			156		
Plumbers' Woodwork Co. Algoma, Wis.	3 4 41	60	149			Steam Appliance Mfg. Co. Batavia, N. Y.			140 187 189			Wolff Mfg. Co., L. Chicago, Ill.	1 2 3 4 7 12 14 32 33 34 35 37 40 41 42 43 44 46 47 48 49 50	51 52 53 58 60 64 80 84 86	109 112 114 115 116 118 119 120 122		
Porcelco Mfg. Co. Springfield, Mass.		60				Stebbins Mfg. Co., E. Springfield, Mass.	1		105			Wolverine Brass Works. Grand Rapids, Mich.	1 4 7 32 37 43			114	
Prescott & Son, J. H. Webster, Mass.			138			Stewart Tank & Mfg. Co. Cleveland, Ohio	3 45					Wood Mfg. Co., John. Conshohocken, Pa.		81 83 84 92			
Pressed Steel Sanitary Mfg. Co. Detroit, Mich.	48					Teahen, James H. Detroit, Mich.	3 47	60				Woodin & Little Pump House San Francisco, Cal.			150	151 152 157 158 159 162 165 166 167 170 171 186	
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Rider-Ersson Engine Co. New York, N. Y.				160		Trenton Brass & Machine Co. Trenton, N. J.	1 2 3 4 7 17 43		105 114 118 120			Yeomans Bros. Chicago, Ill.			113	156	
Riverside Mfg. Co. Reading, Pa.						United Lead Co. New York, N. Y.						Zero Valve & Brass Mfg. Co. Buffalo, N. Y.	5 9 10		109 111 114 115		
Roberts Filter Co., Inc. Philadelphia, Pa.				165 166		United Pump & Power Co. Chicago, Ill.				152							
Rumsey & Co., Ltd. Seneca Falls, N. Y.						U. S. Cast Iron Pipe & Foundry Co. Buffalo, N. Y.	14		107 115								
Rudd Mfg. Co. Pittsburgh, Pa.																	
Sanitary Earthenware Spec- ialty Co. Trenton, N. J.																	
Sanitary Mechanical Spec- ialty Co. New York, N. Y.																	

National Lead Company

Manufacturers of Lead Pipe and Metal Plumbing and Building Materials

NEW YORK
CINCINNATI

PHILADELPHIA (John T. Lewis & Bros. Co.)

BOSTON
CLEVELAND

BUFFALO
ST. LOUIS

PITTSBURGH (National Lead & Oil Co.)

CHICAGO
SAN FRANCISCO

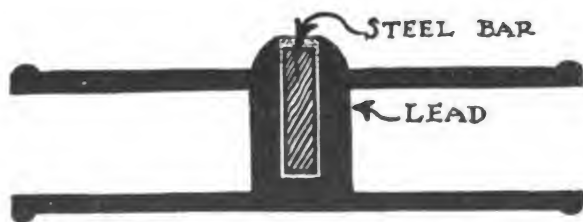
For our Catalog on Red Lead and White Lead and Linseed Oil see Section 39A, Cat. 2

PRODUCTS—LEAD SERVICE PIPE, WASTE PIPE AND TUBING; TIN TUBING, TIN-LINED LEAD PIPE AND BLOCK-TIN PIPE; TRAPS, BENDS, SHEET LEAD; SASH WEIGHTS; CAME LEAD AND ART-GLASS ORNAMENTS

Also, White Lead, Red Lead and Linseed Oil

LEAD SERVICE PIPE—Lead pipe is worth all it costs and should be specified in all plumbing. It not only is safer from the health standpoint, but is much more economical in the long run. Our lead pipe is made from the best new pig lead.

CAME LEAD AND ART-GLASS ORNAMENTS—Our line of Came Lead is complete and perfect in material and workmanship, and includes flat and round, plain and beaded; also, a new-idea Came Lead reinforced with an invisible steel bar. We have sets of detachable samples enabling architects to test for size before specifying. Any architect doing work in art glass may have a set free on request; also, booklet showing cuts of different sizes of leads and illustrated designs of windows made from various sizes of leads.



ENLARGED CROSS-SECTION OF REINFORCED CAME

REINFORCED CAME LEAD—In offering Reinforced Came Lead to the architects we feel that for public buildings and country houses, where the need of cleaning and repairs is always to be thought of, this method of leading is far superior to the old one of stay bars, copper wires, etc. All work in reinforced lead is absolutely flat, and is therefore easy to

"A.B.C." SYSTEMS

clean and, being made in lead, is easy to repair; at the same time it has the stability to withstand any wind pressure and the strain to which such work is subjected, while retaining the freedom of character of the early lead work.

Our offering of lead ornaments for leaded glass windows is unusual. It includes solid ornaments and a number of unusual designs in filigree casting, etc. Illustrations on request.

SHEET LEAD FOR ROOFING AND FLASHINGS—We wish to call attention to Sheet Lead as a material for roofing and flashings. Sheet Lead, if properly laid, will last forever, without any expense for repairing or painting.

We issue a booklet on this subject which will be helpful to those undertaking such work.

If Architects who have in mind the erection of any country houses of the better class, especially in the old and beautiful style of early English architecture, will make a thorough copy of the old details in order to get the desired effect, it will be seen that a liberal use of Lead in roofing will be required. We shall be glad to give to architects or contractors further information on this interesting subject.

MISCELLANEOUS BUILDING MATERIALS—Our traps and bends are the best-finished of any in the market. Sheet lead in largest sheets made.

For painting materials and specifications (White Lead, Red Lead, etc.) see our Catalog, as noted at the head of this page.



IRON PIPE INSTALLED
4 YEARS
Rusted full of holes



LEAD PIPE LAID 2,000
YEARS AGO
In perfect condition to-
day. See our booklet
"Good Plumbing."

Pasman Valve Company

Manufacturers of Crest Flush Valves

729 MONTGOMERY STREET
JERSEY CITY, N. J.

Phone
856 Bergen

PRODUCT—CREST FLUSH VALVES; PAVALCO VALVES

CREST VALVES—These Flush Valves are adapted for direct connection with the main water supply, where it is large enough; or with open or closed general supply tanks, where service pipe is small. Having but **two moving parts**, they are very simple in construction. The piston being water-packed, it does away with such fast-wearing, troublesome-fitting, and easily-broken parts as cams, connecting links and handles. The valves are substantially made of red metal, cleanly finished and nickel-plated.

We manufacture two kinds of Crest Flush Valves, viz.:

Type A—may be used when the water supply comes straight through wall or through floor, entering valve from the bottom.

Type B—when supply comes through wall from back or right or left, entering valve from the side.

These valves can also be furnished with extended push-button stem so that valve may be set **outside of room** in which bowl is located. This is most essential in jails, asylums, etc., to prevent valves being tampered with.

ADVANTAGES—Summarized, the advantages of Crest Flush Valves over other flush valves or tank flush are as follows: a. Simpler construction, having but two moving parts; b. Water-packed piston, dispensing with leather washers, etc.; c. A flush of greater **driving force** than tank flush; d. Type B is a valve especially suited for jails, etc; e. Practically noiseless in operation; f. No hammering in event of any abnormal water pressure; g. They are **water savers**, using but 4 to 5 gallons for an effective flush.

PAVALCO VALVE—This valve is constructed and operated upon the same principle as the Crest valve, except that piston is semi-brass and cup-leather style.

GUARANTEE—All our valves are guaranteed to operate under any pressure and not to hammer.

INSTALLATION DETAILS—Shut-Off Valves—Set Valves **vertically only**, as shown in cuts. Never set a flushing valve without a shut-off valve near it for adjusting volume of flow and for making repairs.

POSITION—Wherever possible set Flushing Valve on left side of bowl, and allow sufficient clearance for seat, when raised.

LARGE INSTALLATIONS—These require a tank on roof with capacity of 25 gallons per Flushing Valve, with outlet in bottom for cleaning purposes, and overflow pipe. Supply the tank from house main with 1" pipe and ball cock. A safe pan with waste pipe should be under the tank to prevent damage in case of leak. If pressure is not strong enough to reach tank, pumps will be necessary. A line of 2" or 2½" pipe from tank to valve lines, reducing as branches are taken off, is amply sufficient for most installations. Branches 1¼" or 1½". Such an arrangement will supply from 20 to 30 closets.

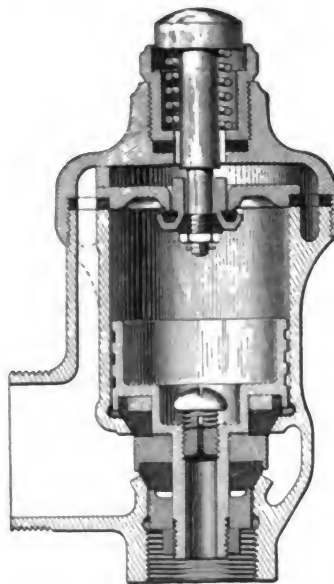
"A.B.C." SYSTEMS



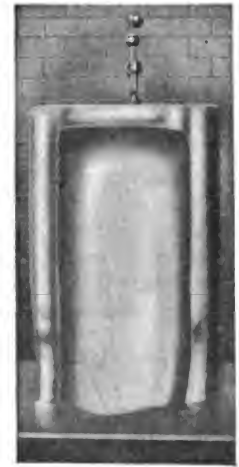
TYPE 'A' CREST VALVE



PAVALCO VALVE



SECTION OF ALL VALVES



TYPE OF URINAL

SCHOOL OR FACTORY INSTALLATIONS—Where closets are installed in batteries in the basement of buildings, and direct supply is unavailable and tank supply undesirable, hang a galvanized iron storage tank horizontally on ceiling of room where toilets are located, and connect 1" supply pipe from main to tank controlled by 1" gate valve. Place special Crest Air Valve on top of tank with ¾" air vent pipe extended to outer air. Run 2" supply pipe from bottom of tank to Flushing Valves, with 1¼" branches, controlled by shut-off valves.

FOR PRIVATE RESIDENCES, ETC.—These valves can be connected to direct supply in residences or wherever their use would be moderate. They will properly flush any water closet bowl direct-connected to house main having ⅝" or ¾" tap, as follows: 5 to 20 pounds pressure, 1¼" house main, with 1¼" pipe from house main to valve; 20 to 40 pounds pressure, 1¼" house main, with 1¼" pipe from house main to valve; over 40 pounds pressure, 1" house main and pipe to valve will answer. In the case of small house mains or low pressure, an attic reservoir or 2" stand-pipe service may be necessary. Printed instruction on such an installation sent free.

National Meter Co.

"Crown," "Empire," "Nash," "Gem," "Premier" Water Meters

Established 1870

84-86 CHAMBERS ST.
NEW YORK, N. Y.

John C. Kelley, Pres't

CHICAGO

BOSTON

PITTSBURGH

SAN FRANCISCO

CINCINNATI

LOS ANGELES

LONDON, ENG.

For our Catalog on Nash Gas and Gasoline Engines see Section 31C, Cat. 1

PRODUCTS—WATER METERS of these Trade Names: "CROWN," "EMPIRE," "NASH," "GEM," "PREMIER"

prepared to manufacture Premier Meters in all sizes, ranging from 8" upwards.

THE CROWN—This is a positive-displacement, rotary-piston meter, introduced by us in 1879. The construction of the meter chamber leaves considerable space around the piston so that foreign material and sediment may escape direct contact with the piston; the amount of surface subjected to destructive action is therefore small. In very bad waters, where other devices have failed, these advantages of the meter are prominent. Because the Crown Meter can be repaired and kept in commission indefinitely at a very small outlay, it is a desirable meter wherever a permanent recording device is wanted for year-in and year-out service.

THE EMPIRE—This is a positive-displace, oscillating-piston meter, introduced by us in 1884. It is unlike any other water-measuring device in the design and operation of the piston. The "Empire" is the simplest meter in principle, the most accurate and most reliable. The piston is small in bulk and light in weight, and is moved by the slightest pressure of water. The areas of the inlet and outlet passages into the measuring chamber are large. Friction losses in the meter chamber are very small.

Valuable features of the "Empire" are the ease with which it can be restored to its original condition after long and excessive wear, and the small cost of maintenance. The perfect balancing of the pressures upon the piston results in a comparatively small amount of strain upon the parts.

For measuring hot liquids, oils, wines, and other liquids, we manufacture the **Hot-Water Empire Meter**, which is an all-metal meter.

THE NASH—This is a disc-type meter; thoroughly accurate, strongly constructed and reliable. It has been on the market for more than twenty years, and meets in every particular all the requirements of a first-class disc meter.

THE GEM—This is a velocity, or current-type meter, introduced by us in 1870. We advise the use of the Gem Meter only on services where a large and rapid delivery of water is of special advantage, i. e. for water supply main, railroad or locomotive stand-pipes, hydraulic elevators, water motors, street-car sprinklers, etc. As the "Gem" has the greatest capacity of any current type of meter, it will not retard the flow to any material extent.

THE PREMIER—This meter is made for use on large mains. Its principle of operation depends upon a peculiar property of Venturi tubes, to wit: If the throats of two similar Venturi tubes are connected and subjected to the same pressure and given the same outlet, similar throat velocities are produced in each. The Premier Meter is self-operating, requires no attendance, need be examined only at convenient intervals, will not freeze while in use, and conforms accurately with accepted hydraulic laws. We are

"A.R.C." SYSTEMS



CROWN



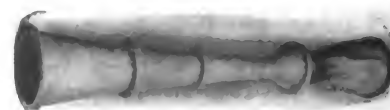
EMPIRE



NASH



GEM



PREMIER

CROWN			
Size Inches	Capacity per Minute, Cubic Feet	Length, Inches	Weight, Pounds
1/4	1	6	13
3/4	2	7 1/2	20
1	4	9	33
1 1/4	8	10 7/8	49
1 1/2	12	13	95
2	20	17	142
3	36	24	226
4	72	29 1/2	461
6	120	36 3/4	999

EMPIRE			
Size Inches	Capacity per Minute, Cubic Feet	Length, Inches	Weight, Pounds
1/4	2	7 1/2	15 3/4
3/4	4	9	21
1	8	10 7/8	33
1 1/4	12	13	57
2	20	17	92
3	36	24	213
4	72	29 1/2	400
6	120	36 3/4	800

NASH			
Size Inches	Capacity per Minute, Cubic Feet	Length, Inches	Weight, Pounds
1/4	2	7 1/2	13 3/4
3/4	4	9	18
1	8	11	29
1 1/4	12	13	60
2	20	17	90
3	36	24	183
4	72	29 1/2	325
6	120	36 3/4	660

GEM			
Size Inches	Capacity per Minute, Cubic Feet	Length, Inches	Weight, Pounds
2	32	17	145
3	72	24	215
4	128	29 1/2	417
6	288	36 3/4	800
8	550	40	990
10	800	42	1410
12	1000	46	1600

FISH TRAPS.

We manufacture fish traps for all sizes of our meters.

STRAIGHT-READING REGISTER.

All our meters are fitted with a straight-reading register.

EXTENSION DIALS.

We manufacture extension dials for all sizes of our meters in these heights: 18, 24, 30 and 36 inches.

Neptune Meter Company

Manufacturers of

**Trident-Disk, Trident-Crest, Trident-Compound, Trident Hot-Water
and Trident Gasoline Meters**

Main Office

90 WEST STREET

NEW YORK, N. Y.

Branches

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BOSTON, MASS.
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PORTLAND, ORE.

SEATTLE, WASH.
SPOKANE, WASH.
VANCOUVER, B. C.

LONDON, ENG.
PARIS, FRANCE
KOBE, JAPAN

Factory

LONG ISLAND CITY, N. Y.

PRODUCTS—WATER METERS: TRIDENT-DISK, "Piston" Type;
TRIDENT-CREST, "Current" Type; TRIDENT COMPOUND; TRIDENT
HOT-WATER

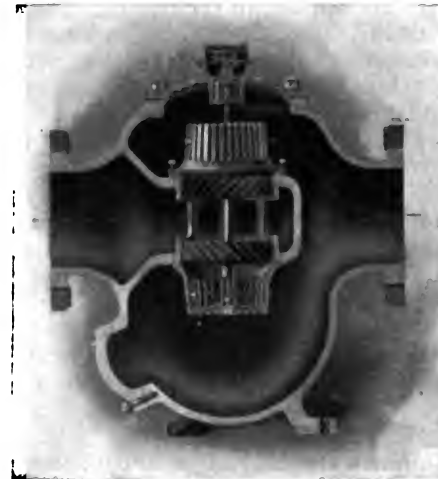
TRIDENT GASOLINE METERS

TRIDENT-DISK BREAKABLE-BOTTOM METERS are
recommended for small services—sizes $\frac{5}{8}$ " to 2".

If frozen, the only part damaged is the bottom—for which
a very nominal charge is made.



VERTICAL SECTIONAL ILLUSTRATION OF $\frac{3}{4}$ -INCH
TRIDENT-DISK METER WITH BREAK-
ABLE BOTTOM



SECTIONAL ILLUSTRATION OF 6-INCH TRIDENT-
CREST METER

TRIDENT-COMPOUND METERS are recommended for
intermittent services, requiring at times only a very small
flow and at other times a very large flow. They are made in
sizes from $1\frac{1}{2}$ " to 8".



TRIDENT COMPOUND METER

TRIDENT-CREST METERS are recommended for large
or heavy flows—sizes $1\frac{1}{4}$ " to 20".

Our large descriptive Catalog will be sent on Application

"A.B.C." SYSTEMS

The Trenton Potteries Company

Manufacturers of Sanitary Pottery Plumbing Fixtures

TRENTON, NEW JERSEY

ASSOCIATED WITH
(THE CANADIAN-TRENTON POTTERIES CO., LTD., ST. JOHNS, QUEBEC)

PRODUCTS—A Complete Line of SANITARY POTTERY PLUMBING FIXTURES

PURPOSES—For the equipment of Bathrooms, Toilets, Kitchens, Laundries, Hospitals, Laboratories, Stables, etc., etc.

CLASSIFICATION:

"IDEAL" SOLID PORCELAIN—Bathtubs, Shower Receptors, Foot and Seat Baths, Drinking Fountains, Kitchen, Pantry and Slop Sinks, Laundry Tubs, Stall Urinals, Manicure and Toilet Tables, etc., etc.



All "IDEAL" Solid Porcelain fixtures are labeled with "A" (or "B") quality trade mark, as shown here.

"IDEAL" Solid Porcelain ware is a fire clay body covered with a vitrified white china surface and a vitrified transparent glaze. The white china covering and glaze are applied to the fire clay body while still in the "green" or unbaked state; then placed in kilns for baking and fired to the maximum temperature required to produce an absolutely integral all clay product of the required beauty and durability.



"IMPERVIO" VITREOUS CHINA—All Vitreous China lavatories, every one of which is labeled with the trade mark shown here. In addition, the word "Impervio" is pressed into the ware in an inconspicuous place.

"VITREOUS CHINA"—Water Closets, all styles; Urinals, all styles; Closet Tanks and Urinal Tanks; Drinking Fountains and miscellaneous fixtures. On every piece of Trenton Potteries Company "Vitreous China" is printed in an inconspicuous place, under the glaze, the trade mark as shown here.



"Impervio" Vitreous China and **"Vitreous China"** ware are produced entirely of white vitreous clay, to which is added a transparent, vitreous glaze, making a superior sanitary product.

"White Bone China"—Towel Bars, all sizes; Soap Holders; Sponge Holders; Loose Toilet Paper Holders; Comb and Brush Holders; Wall Bracketed Drinking Mugs and Toothbrush Cups; Coat Hooks; Cuff Hangers; Roll Toilet Paper Rods, etc., etc. A complete line of Bathroom and Toilet accessories, every piece being stamped in black with trade mark.

White Bone China ware is the finest white vitreous clay, covered with a transparent vitreous glaze, the same materials as used in the making of the best grade of dinner ware.

CLEANLINESS—Our wares will not become stained through continual usage, can be easily cleaned, merely by the use of water; not requiring any special cleaning fluids or powders, and the glaze maintains its glossy surface.

DISTRIBUTION—Our products are generally carried in stock by reputable plumbing supply houses in all parts of the United States, Canada, Mexico and other foreign countries.

If not in stock, goods may be quickly obtained through any of these plumbing supply houses, from our extensive and complete line at the manufacturing plants in Trenton, New Jersey, and in St. Johns, Quebec, Canada.

PRICES—The list prices as shown in this catalog are subject to discounts to the trade. Discount sheets are furnished to all reputable plumbing supply houses, and they will furnish prices

covering your requirements. Upon application to us we will see that prices are immediately given.

METAL TRIMMINGS—We furnish any fixture shown in this catalog complete with metal and wood trimmings, as illustrated and according to the specifications herein.

Otherwise we will furnish the Sanitary Pottery fixtures without trimmings, leaving the selection of metal work to whom you may designate.

SPECIAL DESIGNS—For designing and executing special patterns, we maintain a well equipped designing and modeling department, the services of which are available at all times.

PLACING OF ORDERS—The manufacture of Sanitary Pottery plumbing fixtures is an art, requiring not only the best materials, but careful handling and the time necessary for proper drying and firing. To insure the best service Architects should see that orders are placed with us as soon as possible after the acceptance of the plumbers' quotations.

TRADE TERMS—The following terms are in common usage in the plumbing trade:

"A" Quality: This term is used to designate the best selection of "IDEAL" Solid Porcelain products as they come from the kilns.

"B" Quality: This term is used to designate the class of "IDEAL" Solid Porcelain products coming from the kilns with small defects, which, however, do not impair the sanitary use of fixtures. Such defects are known as "fire cracks," "brown spots" and "green spots."

"Run of Kiln": This term means that the fixtures will be shipped in both "A" and "B" grades, as they come from the kilns, but all goods with unsanitary features are eliminated from this and all other classifications.

"Green State": This term is used to designate all Sanitary Pottery ware before it is baked in the kilns.

"Biscuit State": This term is used to designate "Vitreous China" ware after being baked to a vitreous state, but before the glaze is added.

"Glost State": This term is used to designate all Sanitary Pottery ware after being glazed and when ready for shipment.

SPECIAL FIXTURES—Following is a list of Sanitary Pottery fixtures especially adapted to certain general types of buildings:

APARTMENT HOUSES AND HOTELS—Bathtubs, Plates 2-A, 3-A, 7-A, Shower, Plate 61-A. Lavatories: Plates 109-A, 160-A, 162-A, 675-A, 775-A, 787-A. Sinks, etc.: Plates 323-A, 371-A, 376-A, 381-A. Water Closets: Plate 1060-A. Stall Urinals: Plates 510-A, 515-A. Manicure Table, Plate 403-A.

FACTORIES—Lavatories: Plates 170-A, 231-A, 233-A, 234-A, 756-A. Stall Urinals: Plates 510-A and 515-A. Water Closets: Plates 1010-A, 1360-A, 1364-A.

HOSPITALS—Bathtub, Plate 4-A; other Baths, Plates 50-A, 53-A, 54-A, 56-A. Lavatories: Plates 225-A, 799-A, 850-A. Sinks, etc.: Plates 316-A, 319-A, 323-A, 325-A, 333-A, 334-A, 353-A, 354-A, 355-A, 362-A, 377-A, 400-A, 404-A. Water Closets: Plates 1089-A and 1301-A.

OFFICE BUILDINGS—Lavatories: Plates 148-A, 208-A, 212-A, 691-A, 693-A, 765-A, 785-A, 787-A, 850-A. Stall Urinals: Plates 510-A, 515-A. Water Closets: Plates 1099-A, 1235-A.

RAILROAD STATIONS—Lavatories: Plates 691-A, 693-A. Sinks, etc.: Plates 351-A, 357-A. Stall Urinals: Plates 510-A, 515-A. Water Closets: Plates 995-A, 1010-A, 1025-A, 1078-A, 1235-A, 1103-A.

SCHOOLS—Lavatories: Plates 228-A, 756-A, 785-A. Sinks: Plate 357-A. Stall Urinals: Plates 510-A, 515-A. Water Closets: Plates 1010-A, 1115-A, 1235-A.

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MANUFACTURING PLANTS AND GENERAL OFFICES, TRENTON, N. J.



MANUFACTURING FACILITIES—Our plants at Trenton, N. J., consist of six complete potteries, with a total capacity of 58 kilns.

These potteries, together with the one at St. Johns, Quebec, Canada, have a capacity much exceeding that of any other manufacturer of sanitary pottery in the world.



MODEL BATHROOM NO. 15

MODEL BATHROOM NO. 15.

SPECIFICATIONS OF FIXTURES—**Bathtub**: "Ideal" Solid Porcelain Bathtub, plate 18-A. **Lavatory**: "Ideal" Solid Porcelain Lavatory on pedestal, plate 671-A. **Lavatory on Wall**: Impervio Vitreous China Dental Lavatory, with flushing rim, plate 850-A. **Water Closet Combination**: Vitreous China "Siwelclo" Noiseless Closet combination, plate 982-A.

Model Bathroom No. 15 is of particular interest because of the use of the sanitary Dental Lavatory, in addition to the regular style of lavatory for washing purposes.

When the faucet in the Dental Lavatory is turned, not only is water drawn from the spigot but the bowl of the Lavatory is simultaneously flushed. This Lavatory makes a very attractive and useful addition to the ordinary bathroom, because it eliminates the necessity of using the regular washing bowl when cleansing teeth.

Upon the wall are shown a number of White Bone China accessories, a complete line of which is illustrated in this catalog.



MODEL BATHROOM NO. 18

MODEL BATHROOM NO. 18.

SPECIFICATIONS OF FIXTURES—**Bathtub**: "Ideal" Solid Porcelain Bathtub, plate 18-A. **Lavatory**: "Ideal" Solid Porcelain Lavatory, plate 151-A. **Shower Bath Receptor**: "Ideal" Solid Porcelain Shower Bath Receptor, plate 65-A. **Water Closet Combination**: Vitreous China "Welling" Closet and tank combination, plate 983-A.

This Bathroom is designed primarily to illustrate an attractive and sanitary method of installation of Shower Bath Receptor in the same room with the bathtub.

"Ideal" Solid Porcelain Shower Receptors are shown in this catalog without brass fittings. This Bathroom suggests the use of our plate 65-A Receptor in connection with high-class shower fittings.

Upon the wall are shown a number of White Bone China accessories, a complete line of which is illustrated in this catalog.



MODEL BATHROOM NO. 19

MODEL BATHROOM NO. 19.

SPECIFICATIONS OF FIXTURES—**Bathtub**: "Ideal" Solid Porcelain Bathtub, plate 7-A. **Seat Bath**: "Ideal" Solid Porcelain Seat Bath, plate 53-A. **Lavatory**: "Impervio" Vitreous China Lavatory, plate 695-A. **Water Closet Combination**: Vitreous China "Siwelclo" Noiseless Closet and tank combination, plate 982-A.

In this Bathroom are shown fixtures which, combined, present an almost perfect type of room for residential installation. In addition to the regular pattern Bathtub there is provided a Seat Bath which tiles in the wall as well as into the floor, and for which there is use in every household.

Upon the wall are shown a number of White Bone China accessories, a complete line of which is illustrated in this catalog.

MODEL BATHROOM NO. 20.

SPECIFICATIONS OF FIXTURES—**Bathtub**: "Ideal" Solid Porcelain Bathtub, plate 7-A. **Lavatory**: "Ideal" Solid Porcelain Lavatory on pedestal, plate 660-A. **Water Closet Combination**: Vitreous China "Siwelclo" Noiseless Closet and tank combination, plate 982-A. **Foot Stool**: "Ideal" Solid Porcelain Foot Stool, plate 408-A.

This Bathroom is designed on the English style, in which the water closet is placed in a compartment of its own, immediately between the hall and bathroom; providing for the separate use of the closet when the bathroom is otherwise occupied, and still maintaining the use of the closet in conjunction with the bathroom, if desired.

This arrangement is recommended for country houses and suburban home installation, where but one bathroom and toilet can be installed, and the advantages of this form of installation will be appreciated when guests are entertained.

Upon the wall are shown a number of White Bone China accessories, a complete line of which is illustrated in this catalog.



MODEL BATHROOM NO. 20

MODEL TOILET NO. 21.

SPECIFICATIONS OF FIXTURES—**Lavatory**: Impervio Vitreous China Lavatory, plate 787-A. **Water Closet Combination**: Vitreous China "Siwelclo" Noiseless Closet and tank combination, plate 982-A.

This arrangement of fixtures suggests the utilization of space very often wasted or used for other purposes of not nearly so great advantage to the home. It provides an easily accessible washroom and toilet on the first floor of the house and can be installed at very little expense. Naturally, in a room of this character and so situated in close proximity to living rooms, a silent working closet is essential. For this purpose the "Siwelclo" closet, in combination with tank as shown, will meet every requirement. When the toilet-room door is closed, the flushing of this closet cannot be heard outside. The Lavatory takes up very little space, and this pattern has been installed in many buildings where space requirements were small and usage of the fixtures was continual, and we recommend it as absolutely the fixture for a toilet room as shown.

Upon the wall are shown a number of White Bone China accessories, a complete line of which is illustrated in this catalog.



MODEL TOILET NO. 21

MODEL KITCHEN AND LAUNDRY.

SPECIFICATIONS OF FIXTURES—**Kitchen Sink**: "Ideal" Solid Porcelain Kitchen Sink, with integral back, plate 323-A. **Vegetable Sink**: "Ideal" Solid Porcelain Vegetable Sink, plate 340-A. **Laundry Tubs**: "Ideal" Solid Porcelain roll rim Laundry Tubs, plate 377-A.

This suggestion for a Model Kitchen and Laundry should meet the general requirements of many household installations. The fixtures are so placed as to make necessary the least number of steps in the daily work of the Kitchen and Laundry. In addition to a regular integral back Kitchen Sink we present a very useful Vegetable Sink. This has a porcelain drainboard with upright corrugations to retain the cleansed vegetables and still permit the water to drain from them into the sink.

The laundry tubs being all roll rim may be used in connection with tiled walls. Otherwise laundry tubs with integral high backs may be used.



MODEL KITCHEN AND LAUNDRY

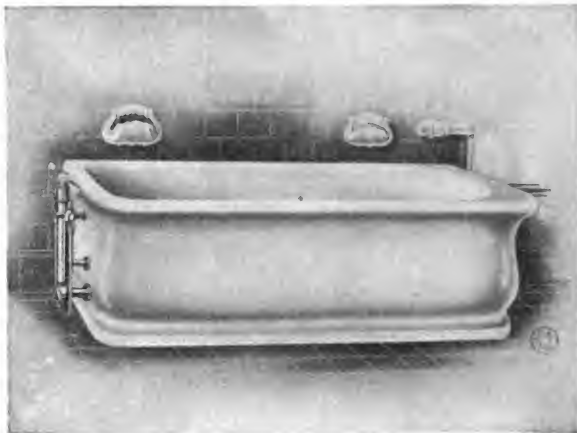


PLATE 2-A

SPECIFICATIONS—"Ideal" Solid Porcelain "Madison" Bathtub, ("A" or "B") quality; plate 2-A; size (see below); with integral base; to set into tiled wall and floor. Glazed white inside, over roll rim and around base, with white enamel finish outside. Fitted with nickel-plated brass combination bell supply and waste, with china Fuller valve handles and china waste knob.

DIMENSIONS:		
Length outside.....	5'	5' 6"
Width outside.....	30"	30"
Depth inside.....	19"	19"
Height floor to top.....	21"	21"

TELEGRAPHIC CODE.....UTPAN UTPEP

LIST PRICES:		
Complete as specified, "A" quality.....	\$205.00	\$215.00
Complete as specified, "B" quality.....	160.00	167.00
Bathtub only, "A" quality.....	150.00	160.00
Bathtub only, "B" quality.....	105.00	112.00

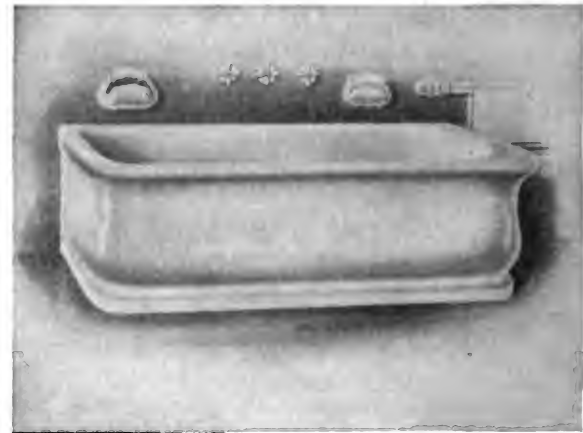


PLATE 3-A

SPECIFICATIONS—"Ideal" Solid Porcelain "Columbia" Bathtub, ("A" or "B") quality; plate 3-A; size (see below); with integral base; to tile into wall at back and into floor. Glazed white inside and over roll rim and around base and with plain white enamel finish outside. Fitted with combination bell supply and waste fixture set into wall as shown, with four arm china tipped compression handles on valves and on waste.

DIMENSIONS		
Length outside.....	5'	5' 6"
Width outside.....	30"	30"
Depth inside.....	19"	19"
Height floor to top.....	21"	21"

TELEGRAPHIC CODE.....UTDIF UTDG

LIST PRICES		
Complete as specified, "A" quality.....	\$215.00	\$225.00
Complete as specified, "B" quality.....	170.00	177.00
Bathtub only, "A" quality.....	150.00	160.00
Bathtub only, "B" quality.....	105.00	112.00

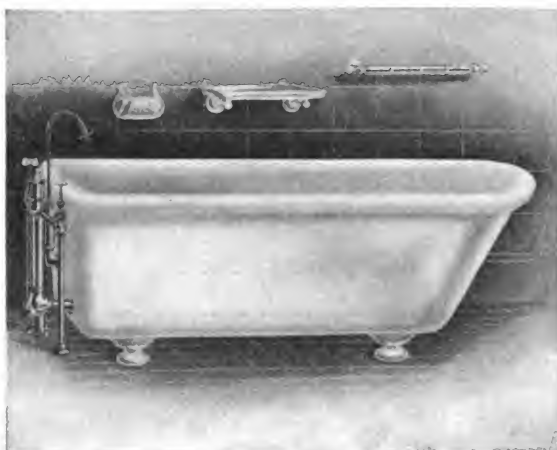


PLATE 4-A

SPECIFICATIONS—"Ideal" Solid Porcelain Light-weight Bathtub, ("A" or "B") quality; plate 4-A; size (see below); set on porcelain feet. Glazed inside and over roll rim and with plain white enamel finish outside. Fitted with Nickel-plated brass combination swinging goose-neck supply over rim, and waste; with china indexes on compression valves and waste.

DIMENSIONS			
Length outside.....	4' 6"	4' 10"	5' 4"
Width outside.....	30"	30"	30"
Depth inside.....	17"	17"	17"
Height floor to top.....	23 1/2"	23 1/2"	23 1/2"

TELEGRAPHIC CODE.....UTXIZ UTXOB UTXUG

LIST PRICES			
Complete as specified, "A" quality.....	\$124.00	\$129.00	\$139.00
Complete as specified, "B" quality.....	109.00	114.00	119.00
Bathtub only, "A" quality.....	70.00	75.00	85.00
Bathtub only, "B" quality.....	55.00	60.00	65.00
Four porcelain feet.....	4.00	4.00	4.00

"A.B.C." SYSTEMS



PLATE 5-A

SPECIFICATIONS—"Ideal" Solid Porcelain Light-weight Bathtub, ("A" or "B") quality; plate 5-A; size (see below); with integral base. Glazed white inside and over roll rim and around base, with plain white enamel finish outside. Fitted with nickel-plated brass combination bell supply and waste, with china indexes on compression valves and waste.

DIMENSIONS			
Length outside.....	4' 6"	4' 10"	5' 4"
Width outside.....	30"	30"	30"
Depth inside.....	17"	17"	17"
Height floor to top.....	21"	21"	21"

TELEGRAPHIC CODE.....UPVAP UPNUN UPNYP

TELEGRAPHIC CODE.....	UPVAP	UPNUN	UPNYP
LIST PRICES			
Complete as specified, "A" quality.....	\$125.00	\$130.00	\$140.00
Complete as specified, "B" quality.....	107.50	112.50	120.00
Bathtub only, "A" quality.....	80.00	85.00	95.00
Bathtub only, "B" quality.....	62.50	67.50	75.00

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PLATE 6-A

SPECIFICATIONS—"Ideal" Solid Porcelain "French" Bathtub, ("A" or "B") quality; with integral base; plate 6-A; size (see below); to tile into wall and into floor. Glazed white inside and over roll rim and along base, with plain white enamel finish outside. Fitted with nickel-plated brass combination bell supply and waste with four arm china handles on compression valves and with china waste knob.

DIMENSIONS			
Length outside.....	5'	5' 6"	6'
Width outside.....	30"	30"	30"
Depth inside.....	19"	19"	19"
Height floor to top.....	21"	21"	21"
TELEGRAPHIC CODE.....			
UPRY8 UPSAM			
LIST PRICES			
Complete as specified, "A" quality.....	\$196.00	\$206.00	
Complete as specified, "B" quality.....	151.00	158.00	
Bathtub only, "A" quality.....	150.00	160.00	
Bathtub only, "B" quality.....	105.00	112.00	



PLATE 8-A

SPECIFICATIONS—"Ideal" Solid Porcelain "American" Bathtub, ("A" or "B") quality; with integral base; plate 8-A; size (see below); to tile into floor. Glazed white inside, over roll rim and around base, with white enamel finish outside. Fitted with nickel-plated brass combination bell supply and waste with four arm china tipped handles on compression valves and china waste knob.

DIMENSIONS				
Length outside.....	4' 6"	5'	5' 6"	6'
Width outside.....	33"	33"	33"	33"
Depth inside.....	18 1/4"	18 1/4"	18 1/4"	18 1/4"
Height floor to top.....	20 1/4"	20 1/4"	20 1/4"	20 1/4"
TELEGRAPHIC CODE.....				
UPPIM UPRIN UPPYR UPRUR				
LIST PRICES				
Complete as specified, "A" quality.....	\$191.00	\$201.00	\$211.00	\$231.00
Complete as specified, "B" quality.....	149.00	156.00	163.00	177.00
Bathtub only, "A" quality.....	140.00	150.00	160.00	180.00
Bathtub only, "B" quality.....	98.00	105.00	112.00	126.00

"A.B.C." SYSTEMS

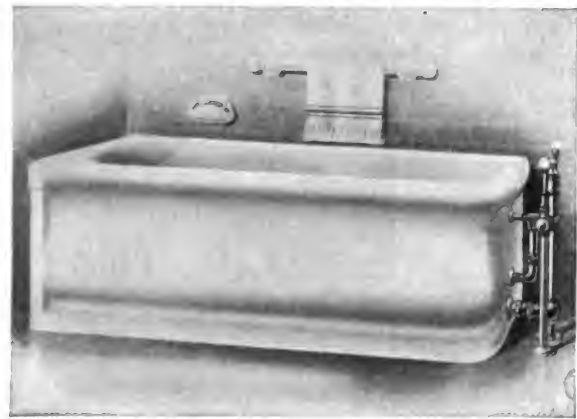


PLATE 7-A

SPECIFICATIONS—"Ideal" Solid Porcelain "New Monarch" Bathtub, ("A" or "B") quality; with integral base; plate 7-A; size (see below); to tile into corner (state clearly whether right or left corner). Glazed white inside and outside. Fitted with nickel-plated brass combination bell supply and waste fitting, with china Fuller valve handles and china waste knob.

DIMENSIONS			
Length outside.....	5'	5' 6"	6'
Width outside.....	30"	30"	30"
Depth inside.....	19"	19"	19"
Height floor to top.....	21"	21"	21"
TELEGRAPHIC CODE.....			
UPPON UPPUP URJAF			
LIST PRICES			
Complete as specified, "A" quality.....	\$176.00	\$186.00	\$211.00
Complete as specified, "B" quality.....	136.00	146.00	171.00
Bathtub only, "A" quality.....	120.00	130.00	155.00
Bathtub only, "B" quality.....	80.00	90.00	115.00



PLATE 10-A

SPECIFICATIONS—"Ideal" Solid Porcelain "French" Bathtub, ("A" or "B") quality; plate 10-A; size (see below). Glazed white inside and over roll rim, with white enamel finish outside. Set on porcelain feet, and fitted with nickel-plated brass combination bell supply and waste, with china Fuller valve handles and china waste knob.

DIMENSIONS			
Length outside.....	4' 6"	5'	5' 6"
Width outside.....	30"	30"	30"
Depth inside.....	18"	18"	18"
Height floor to top.....	25 1/4"	25 1/4"	25 1/4"
TELEGRAPHIC CODE.....			
UPPIC UPFOD UPFUF			
LIST PRICES			
Complete as specified, "A" quality.....	\$155.00	\$165.00	\$175.00
Complete as specified, "B" quality.....	123.50	130.50	137.50
Bathtub only, "A" quality.....	105.00	115.00	125.00
Bathtub only, "B" quality.....	73.50	80.50	87.50
Four porcelain feet.....	4.00	4.00	4.00
DIMENSIONS			
Length outside.....	6'	6' 6"	7'
Width outside.....	30"	33"	33"
Depth inside.....	18"	18"	18"
Height floor to top.....	25 1/4"	25 1/4"	25 1/4"
TELEGRAPHIC CODE.....			
UPFYG URJUK URJOJ			
LIST PRICES			
Complete as specified, "A" quality.....	\$195.00	\$215.00	\$240.00
Complete as specified, "B" quality.....	151.50	165.50	183.00
Bathtub only, "A" quality.....	145.00	165.00	190.00
Bathtub only, "B" quality.....	101.50	115.50	133.00
Four porcelain feet.....	4.00	4.00	4.00

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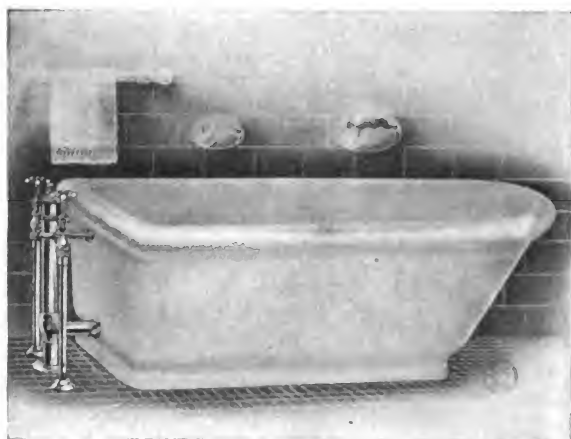


PLATE 11-A

SPECIFICATIONS—"Ideal" Solid Porcelain "French" Bathtub, ("A" or "B") quality; with integral base; plate 11-A; size (see below). Glazed white inside, over roll rim and around base, with white enamel finish outside. Fitted with nickel-plated brass combination bell supply and waste with china indexes on compression valve handles and on waste.

DIMENSIONS

Length outside.....	4' 6"	5'	5' 6"	6'
Width outside.....	30"	30"	30"	30"
Depth inside.....	18"	18"	18"	18"
Height floor to top.....	21"	21"	21"	21"

TELEGRAPHIC CODE..... UPGAB UPGID UPGEA UPGOP

LIST PRICES

Complete as specified, "A" quality.....	\$160.00	\$170.00	\$185.00	\$205.00
Complete as specified, "B" quality.....	125.50	132.50	143.00	157.00
Bathtub only, "A" quality.....	115.00	125.00	140.00	160.00
Bathtub only, "B" quality.....	80.50	87.50	98.00	112.00



PLATE 14-A

SPECIFICATIONS—"Ideal" Solid Porcelain Oval pattern Bathtub, ("A" or "B") quality; with integral base; plate 14-A; size (see below). Glazed white inside, over roll rim and around base, with white enamel finish and raised bead decoration outside. Fitted with nickel-plated brass combination gooseneck over rim supply and waste, with four arm china fitted compression handles on valves and china waste knob.

DIMENSIONS

Length outside.....	5' 6"	6'
Width outside.....	34 1/4"	36"
Depth inside.....	19"	19"
Height floor to top.....	21"	21"

TELEGRAPHIC CODE..... URDIC UNHOF

LIST PRICES

Complete as specified, "A" quality.....	\$240.00	\$260.00
Complete as specified, "B" quality.....	170.00	180.00
Bathtub only, "A" quality.....	180.00	200.00
Bathtub only, "B" quality.....	110.00	120.00

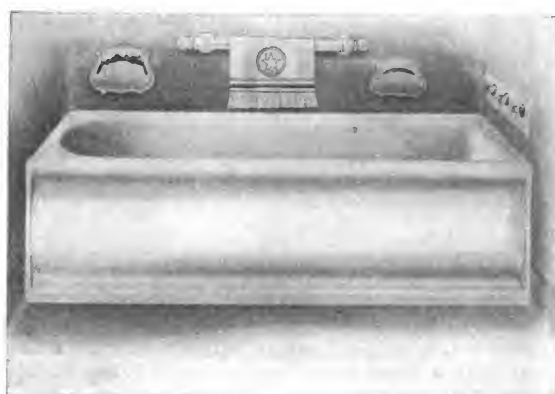


PLATE 16-A

SPECIFICATIONS—"Ideal" Solid Porcelain "Recess" Bathtub, ("A" or "B") quality; to tile into recess and floor; plate 16-A; size (see below). Glazed white inside and outside. Fitted with combination bell supply and waste fixture set into wall as shown, with four arm china tipped compression valve and waste handles; all set into china plate tiled into wall.

DIMENSIONS

Length outside.....	5'	5' 6"	6'
Width outside.....	31"	31"	31"
Depth inside.....	19"	19"	19"
Height floor to top.....	21"	21"	21"

TELEGRAPHIC CODE..... UNBAT UNBEV UNBIA

LIST PRICES

Complete as specified, "A" quality.....	\$212.00	\$222.00	\$242.00
Complete as specified, "B" quality.....	167.00	174.00	188.00
Bathtub only, "A" quality.....	150.00	160.00	180.00
Bathtub only, "B" quality.....	105.00	112.00	126.00

"A.B.C." SYSTEMS

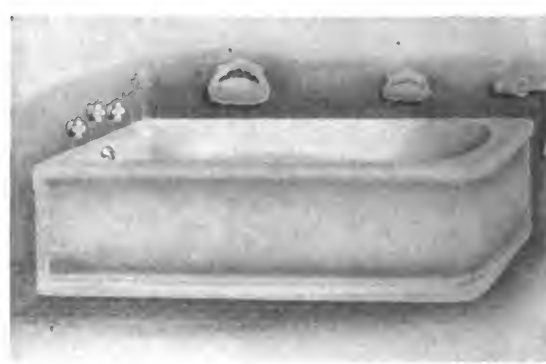


PLATE 17-A

SPECIFICATIONS—"Ideal" Solid Porcelain "Ipswich" Swell-front Bathtub, ("A" or "B") quality; plate 17-A; size (see below); to tile into corner (state clearly whether right or left corner). Glazed white inside and outside. Fitted with combination supply and waste fittings with nickel-plated brass curved spout, four arm solid china handles on nickel-plated brass compression supply valves and on waste, all set into wall, as shown.

DIMENSIONS

Length outside.....	5'	5' 6"
Width outside.....	30"	30"
Depth inside.....	19"	19"
Height floor to top.....	21"	21"

TELEGRAPHIC CODE..... UNJAC UNJYJ

LIST PRICES

Complete as specified, "A" quality.....	\$211.00	\$221.00
Complete as specified, "B" quality.....	166.00	173.00
Bathtub only, "A" quality.....	150.00	160.00
Bathtub only, "B" quality.....	105.00	112.00

Continued on next page



PLATE 18-A

SPECIFICATIONS—"Ideal" solid porcelain "Seville" bathtub, ("A" or "B") quality; with integral base; plate 18-A; size 5 ft. 6 in.; to tile into floor and corner (state clearly whether right or left corner). Glazed white inside and outside. Fitted with combination bell supply and waste fittings with nickel-plated brass china indexed compression valve handles and china waste knob, valves and waste through top of tub.

DIMENSIONS

Length outside.....	5' 6"
Width outside.....	30"
Depth inside.....	18"
Height floor to top.....	21"

TELEGRAPHIC CODE..... UNJUH

LIST PRICES

Complete as specified, "A" quality.....	\$216.00
Complete as specified, "B" quality.....	165.00
Bathtub only, "A" quality.....	170.00
Bathtub only, "B" quality.....	119.00



PLATE 50-A

SPECIFICATIONS—"Ideal" solid porcelain seat bath, ("A" or "B") quality; plate 50-A; on porcelain feet. Glazed white inside and over roll rim and with white enamel finish outside (or glazed white inside and outside). Fitted with nickel-plated brass combination bell supply and waste fixture, with china indexes on compression valves and waste.

DIMENSIONS

Length outside.....	30"
Front to back.....	27"
Height floor to top at back.....	20 3/4"
At front.....	15 1/2"

TELEGRAPHIC CODE.....	URCIB (Glazed inside and over roll rim)	URMAJ (Glazed inside and outside)
-----------------------	--	--------------------------------------

LIST PRICES.

Complete as specified, "A" quality.....	\$79.00	\$89.00
Complete as specified, "B" quality.....	67.00	69.00
Seat bath only "A" quality.....	40.00	60.00
Seat bath only "B" quality.....	28.00	40.00
Two porcelain feet.....	4.00	4.00



PLATE 53-A

SPECIFICATIONS—"Ideal" solid porcelain seat bath, ("A" or "B") quality; plate 53-A; to tile into wall; with integral base, glazed inside and over roll rim and around base, and with white enamel finish outside (or glazed white inside and outside). Fitted with nickel-plated brass combination bell supply and waste, with china waste knob and four-arm solid china compression handles.

DIMENSIONS

Length outside.....	30"
Front to back outside.....	27"
Height floor to top at back.....	20 3/4"
Height at front.....	15 1/2"

TELEGRAPHIC CODE.....	UTNUS (Glazed inside and over roll rim)	UTNYL (Glazed inside and outside)
-----------------------	--	--------------------------------------

LIST PRICES

Complete as specified, "A" quality.....	\$91.00	\$101.00
Complete as specified, "B" quality.....	76.00	80.00
Seat bath only, "A" quality.....	50.00	70.00
Seat bath only, "B" quality.....	35.00	49.00

"A.B.C." SYSTEMS



PLATE 52-A

SPECIFICATIONS—"Ideal" solid porcelain seat bath, ("A" or "B") quality; plate 52-A; with integral base, glazed inside and over roll rim and around base, and with white enamel finish outside (or glazed white inside and outside). Fitted with nickel-plated brass combination bell supply and waste, with china waste knob and china Fuller handles.

DIMENSIONS

Length outside.....	30"
Front to back outside.....	27"
Height floor to top at back.....	20 3/4"
At front.....	15 1/2"

TELEGRAPHIC CODE.....	URDOD (Glazed inside and over roll rim)	URLYN (Glazed inside and outside)
-----------------------	--	--------------------------------------

LIST PRICES

Complete as specified, "A" quality.....	\$100.00	\$110.00
Complete as specified, "B" quality.....	85.00	89.00
Seat bath only "A" quality.....	50.00	70.00
Seat bath only "B" quality.....	35.00	49.00

Continued on next page



PLATE 54-A

SPECIFICATIONS—"Ideal" solid porcelain foot bath, ("A" or "B") quality; plate 54-A; on porcelain feet. Glazed white inside and outside and fitted with nickel-plated brass combination bell supply and waste fitting, with china indexes on valves and waste.

NOTE—Also made with integral base.

DIMENSIONS	On Feet	On Base
Length outside.....	26"	26"
Front to back.....	21 1/2"	21 1/2"
Height floor to top.....	13"	13"
TELEGRAPHIC CODE.....	URCEZ	URCAK
LIST PRICES		
Complete as specified, "A" quality.....	\$54.00	\$59.00
Complete as specified, "B" quality.....	46.50	50.00
Foot bath only, "A" quality.....	25.00	30.00
Foot bath only, "B" quality.....	17.50	21.00
Four porcelain feet.....	4.00	.....



PLATE 56-A

SPECIFICATIONS—"Ideal" solid porcelain baby bathtub, ("A" or "B") quality; plate 56-A; on porcelain pedestal. Glazed white and fitted with nickel-plated brass combination bell supply and waste fixture, with china index compression handles and china waste knob and with 2" waste trap to wall.

DIMENSIONS	
Bath.....	36" x 24"
Height from floor to top of bath.....	31"
Depth inside.....	13"
TELEGRAPHIC CODE.....	USLEK
LIST PRICES	
Complete as specified, "A" quality.....	\$90.50
Complete as specified, "B" quality.....	69.50
Baby bathtub only, "A" quality.....	45.00
Baby bathtub only, "B" quality.....	31.50
Pedestal only, "A" quality.....	25.00
Pedestal only, "B" quality.....	17.50

"A.B.C." SYSTEMS



PLATE 59-A

SPECIFICATIONS—"Ideal" solid porcelain square shower bath receptor, ("A" or "B") quality; plate 59-A; to tile into floor. Fitted with nickel-plated brass outlet strainer and floor flange only.

NOTE—This receptor can be cut for any style of shower fittings desired.

DIMENSIONS	36" x 36"	42" x 42"
Outside.....	36"	42"
Depth inside.....	7 1/4"	7 1/4"
TELEGRAPHIC CODE.....	URXAT	URWOW
LIST PRICES		
Complete as specified, "A" quality.....	\$84.00	\$104.00
Complete as specified, "B" quality.....	60.00	74.00
Receptor only, "A" quality.....	80.00	100.00
Receptor only, "B" quality.....	56.00	70.00



PLATE 61-A

SPECIFICATIONS—"Ideal" solid porcelain corner receptor for shower bath, ("A" or "B") quality; plate 61-A; to tile into floor and walls. Fitted with nickel-plated brass outlet strainer and floor flange.

NOTE—This receptor can be cut for any style of shower fittings.

DIMENSIONS	
Sides extend along wall from corner.....	33 1/4"
Distance over all from corner to front of Receptor.....	49"
Depth inside.....	7 1/4"
TELEGRAPHIC CODE.....	URCOC
LIST PRICES	
Complete as specified, "A" quality.....	\$104.00
Complete as specified, "B" quality.....	74.00
Receptor only, "A" quality.....	100.00
Receptor only, "B" quality.....	70.00



PLATE 62-A

SPECIFICATIONS—"Ideal" solid porcelain round shower receptor, with squared back, ("A" or "B") quality; plate 62-A; to tile into floor and against straight wall. Fitted with nickel-plated brass outlet strainer with floor flange.

NOTE—This receptor can be cut for any style of shower fittings.

DIMENSIONS	
Along wall.....	36"
Distance over all, from wall to front of Receptor.....	42"
Outside diameter of Receptor.....	42"
Depth inside.....	7 1/4"
TELEGRAPHIC CODE.....	UNDYD
LIST PRICES	
Complete as specified, "A" quality.....	\$104.00
Complete as specified, "B" quality.....	74.00
Receptor only, "A" quality.....	100.00
Receptor only, "B" quality.....	70.00

Continued on next page

EXPLANATION—"Ideal" solid porcelain shower receptors will be cut for any style of shower fittings required. In many hotels shower baths are in greater demand than standard patterns of bathtub. For a man's use the shower bath is recognized as almost an essential. Because of the great variety of conditions under which it is possible to install shower baths we do not show any shower fittings with "Ideal" porcelain receptors, leaving it to the architect's judgment to select such methods of water supply as may be most available. We will, however, be glad to make suggestions as to shower fittings and also supply the brass work. In any event we will ship "Ideal" porcelain shower receptors cut so as to be used in conjunction with any style of shower fittings and make no charge for the cutting, provided exact instructions are given as to sizes of holes for rods, centers, etc.



PLATE 63-A

SPECIFICATIONS—"Ideal" solid porcelain round shower receptor, ("A" or "B") quality; plate 63-A; to tile into floor. Fitted with nickel-plated brass outlet strainer with floor flange.

NOTE—This receptor can be cut for any style of shower fittings desired.

DIMENSIONS	
Outside diameter.....	42"
Depth inside.....	7 1/4"
TELEGRAPHIC CODE	USCOD
LIST PRICES	
Complete as specified, "A" quality.....	\$104.00
Complete as specified, "B" quality.....	74.00
Receptor only, "A" quality.....	100.00
Receptor only, "B" quality.....	70.00



PLATE 64-A

SPECIFICATIONS—"Ideal" solid porcelain "Hermitage" corner shower receptor, ("A" or "B") quality; plate 64-A; to tile into floor and side walls. Fitted with nickel-plated brass outlet strainer with floor flange.

NOTE—This receptor can be cut for any style of shower fittings desired.

DIMENSIONS	
Sides extend along wall from corner.....	31"
Distance over all from corner to front point of Receptor.....	42"
Distance from front point of Receptor to side walls.....	31"
Inside depth.....	6 1/2"
TELEGRAPHIC CODE	USCIC
LIST PRICES	
Complete as specified, "A" quality.....	\$84.00
Complete as specified, "B" quality.....	60.00
Receptor only, "A" quality.....	80.00
Receptor only, "B" quality.....	56.00

"A.B.C." SYSTEMS



PLATE 65-A

SPECIFICATIONS—"Ideal" solid porcelain "Romsdale" recess shower receptor, ("A" or "B") quality; plate 65-A; to tile into floor and recess walls. Fitted with nickel-plated brass outlet strainer and floor flange.

NOTE—This receptor can be cut for any style of shower fittings desired.

DIMENSIONS	
Outside.....	36" x 36"
Depth inside.....	9"
TELEGRAPHIC CODE	UTMIN
LIST PRICES	UTMOP
Complete as specified, "A" quality.....	\$59.00
Complete as specified, "B" quality.....	49.00
Receptor only, "A" quality.....	55.00
Receptor only, "B" quality.....	45.00

EXPLANATION—"Ideal" solid porcelain bathfeet are used with solid porcelain bathtubs wherever tubs are not tiled into the floor. They are of the same grade of ware as "Ideal" porcelain bathtubs and provide a most sanitary and slightly support, being glazed white all over to assure freedom from absorption. When used in conjunction with iron bathtubs they will aid toward more complete sanitation, as there will be no discoloration from water splashed upon the floor. They are made in height suitable to guarantee the proper pitch for draining iron bathtubs.

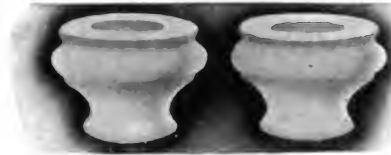


PLATE 80-A

SPECIFICATIONS—"Ideal" solid porcelain set of four round bathfeet, plate 80-A, for porcelain bathtub.

DIMENSIONS	
Diameter at top.....	6"
Diameter at base.....	4 1/2"
Height.....	4 1/4"
TELEGRAPHIC CODE	UPPEL
LIST PRICES	
Set of four porcelain feet.....	\$4.00

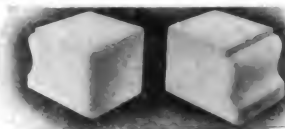


PLATE 81-A

SPECIFICATIONS—"Ideal" solid porcelain set of four "Block" pattern bathfeet, plate 81-A, for porcelain bathtubs.

DIMENSIONS	
Top.....	5" x 5"
Base.....	5" x 6"
Height.....	4 1/4"
TELEGRAPHIC CODE	UPREL
LIST PRICES	
Set of four feet.....	\$5.00

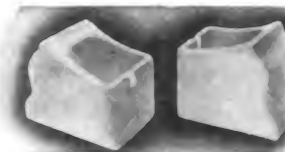


PLATE 82-A

SPECIFICATIONS—"Ideal" solid porcelain set of four "Block" pattern bathfeet, plate 82-A, for iron bathtub.

DIMENSIONS	
To give an iron bathtub the proper pitch for draining two feet are furnished, 7 1/4" x 5" at base, 5 1/2" high at front, 4 1/2" high at rear; and two feet 7 1/2" x 5" at base; 6" high at front and 5" high at rear.	
TELEGRAPHIC CODE	UPREM
LIST PRICES	
Set of four feet.....	\$5.00

Continued on next page

SANITARY POTTERY LAVATORIES—There is a growing demand, especially in public buildings, that lavatories be of such resistant material as will guarantee an inviting, cleanly appearance, even though many foreign substances may find their way into the basins.

Therefore, the greatest care should be taken to install lavatories of such materials as cannot be affected by these foreign substances. As a rule, these substances quickly produce a chemical change when brought into contact with susceptible materials.

Glass is well known to be most resistant. The glaze on "Impervio" vitreous china lavatories is of practically the same constituency as the finest glass, while the body of the ware is of the closest body of clay vitrified by an intense heat in baking or firing.

No better materials than these can be utilized in making lavatories capable of resisting the attacks of the many foreign substances with which they are so often brought into contact.

Like "Impervio" vitreous china, the glaze on "Ideal" porcelain is baked with and made part of the ware itself. The clay body is not, however, non-absorbent, but the hardness of the glaze which protects and covers this clay body is sufficient to withstand the ordinary usage to which such lavatories are subjected.

"Ideal" solid porcelain lavatories have been made by us for years. They are installed in hundreds of hotels, apartment houses, residences and other buildings and have stood the test of time.



PLATE 106-A

SPECIFICATIONS—"Ideal" solid porcelain "Avalon" oval lavatory, ("A" or "B") quality; plate 106-A; size (see below); on plain round porcelain pedestal. Fitted with nickel-plated brass Fuller basin cocks with china handles; nickel-plated brass standing waste and overflow with china waste knob; nickel-plated brass supply pipes to wall; nickel-plated brass $1\frac{1}{4}$ " basin trap to wall and nickel-plated brass wall stay braces.

DIMENSIONS

Lavatory.....	27" x 22"	33" x 24"	37" x 27"
Bowl.....	13" x 19" x 6"	13" x 17" x 6½"	15" x 19" x 7"
TELEGRAPHIC CODE.....	UNRIM	URHIG	UNREL
LIST PRICES			
Complete as specified, "A" quality.....	\$65.50	\$67.50	\$76.50
Complete as specified, "B" quality.....	53.50	54.90	61.20
Lavatory only, "A" quality.....	28.00	30.00	36.00
Lavatory only, "B" quality.....	19.60	21.00	25.20
Pedestal only, "A" quality.....	12.00	12.00	15.00
Pedestal only, "B" quality.....	8.40	8.40	10.50



PLATE 105-A

SPECIFICATIONS—"Ideal" solid porcelain "Elmore" oval lavatory, ("A" or "B") quality; plate 105-A; size (see below); on porcelain fluted pedestal. Fitted with nickel-plated brass low-down compression basin cocks with china indexes; nickel-plated brass standing waste and overflow, with china index; nickel-plated brass supply pipes to wall; $1\frac{1}{4}$ " basin trap to wall and nickel-plated wall stay braces.

DIMENSIONS

DIMENSIONS			
Lavatory.....	27" x 22"	33" x 24"	37" x 27"
Bowl.....	13" x 19" x 6"	13" x 17" x 6½"	15" x 19" x 7"
TELEGRAPHIC CODE.....	UNCUB	UNCYC	UNDAW
LIST PRICES			
Complete as specified, "A" quality.....	\$64.00	\$66.00	\$75.00
Complete as specified, "B" quality.....	51.40	52.80	59.10
Lavatory only, "A" quality.....	28.00	30.00	36.00
Lavatory only, "B" quality.....	19.60	21.00	25.20
Pedestal only, "A" quality.....	14.00	14.00	17.00
Pedestal only, "B" quality.....	9.80	9.80	11.90

"A.B.C." SYSTEMS



PLATE 108-A

SPECIFICATIONS—"Ideal" solid porcelain "Chatsworth" oval lavatory, ("A" or "B") quality; plate 108-A; size (see below); on plain round porcelain pedestal. Fitted with nickel-plated brass combination supply and waste fitting with china Fuller handles and china waste knob; nickel-plated brass wall stay braces; nickel-plated brass supply pipes to wall; nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS

DIMENSIONS			
Lavatory.....	27" x 22"	33" x 24"	37" x 27"
Bowl.....	13" x 19" x 6"	13" x 17" x 6½"	15" x 19" x 7"
TELEGRAPHIC CODE.....	UNJED	UNHUG	UNJIF
LIST PRICES			
Complete as specified, "A" quality.....	\$76.50	\$78.50	\$87.50
Complete as specified, "B" quality.....	64.50	65.90	72.20
Lavatory only, "A" quality.....	28.00	30.00	36.00
Lavatory only, "B" quality.....	19.60	21.00	25.20
Pedestal only, "A" quality.....	12.00	12.00	15.00
Pedestal only, "B" quality.....	8.40	8.40	10.50

Continued on next page



PLATE 109-A

SPECIFICATIONS—"Ideal" solid porcelain "Ardmore" oval lavatory, ("A" or "B") quality; plate 109-A; size (see below); on porcelain swell pedestal. Fitted with nickel-plated brass combination supply and waste fitting with china Fuller valve handles and china waste knob; nickel-plated brass supply pipes to wall; $1\frac{1}{4}$ " nickel-plated brass basin trap to wall, nickel-plated brass wall-stay braces.

DIMENSIONS			
Lavatory	27" x 22"	33" x 24"	37" x 27"
Bowl	13" x 19" x 6"	13" x 17" x 6 $\frac{1}{2}$ "	15" x 19" x 7"
TELEGRAPHIC CODE.....			
URKIJ	URDEB	URCUD	
LIST PRICES			
Complete as specified, "A" quality	\$78.50	\$80.50	\$89.50
Complete as specified, "B" quality	65.90	67.30	73.60
Lavatory only, "A" quality	28.00	30.00	36.00
Lavatory only, "B" quality	19.60	21.00	25.20
Pedestal only, "A" quality	14.00	14.00	17.00
Pedestal only, "B" quality	9.80	9.80	11.90



PLATE 121-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Advance" lavatory, ("A" or "B") quality; plate 121-A; set on porcelain legs. Fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass standing overflow and waste, with china knob; nickel-plated brass supply pipes to wall, with china indexed compression controlling valves, and nickel-plated brass $\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		
Lavatory	30" x 24"	33" x 24"
Bowl	13" x 17" x 6"	13" x 17" x 6"
TELEGRAPHIC CODE.....		
UNHYU	UNJOG	
LIST PRICES		
Complete as specified, "A" quality	\$64.00	\$70.00
Complete as specified, "B" quality	51.40	55.60
Lavatory only, "A" quality	30.00	36.00
Lavatory only, "B" quality	21.00	25.20
Porcelain legs and supports, "A" quality	12.00	12.00
Porcelain legs and supports, "B" quality	8.40	8.40



PLATE 129-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Brooklyn" lavatory, ("A" or "B") quality; plate 129-A; size (see below); set upon porcelain leg. Fitted with nickel-plated brass low-down compression basin cocks with china indexes; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		
Lavatory	26" x 24"	30" x 24"
Bowl	17" x 13" x 6 $\frac{1}{2}$ "	17" x 13" x 6 $\frac{1}{2}$ "
TELEGRAPHIC CODE.....		
UNGUF	UNGC	
LIST PRICES		
Complete as specified, "A" quality	\$49.50	\$52.50
Complete as specified, "B" quality	40.05	42.15
Lavatory only, "A" quality	22.00	25.00
Lavatory only, "B" quality	15.40	17.50
Porcelain leg and supports, "A" quality	9.50	9.50
Porcelain leg and supports, "B" quality	6.55	6.65



PLATE 130-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Brooklyn" lavatory, ("A" or "B") quality; plate 130-A; size (see below); set upon two porcelain legs. Fitted with nickel-plated brass combination supply and waste fitting with four-arm china compression valve handles and china waste knob; nickel-plated brass supply pipes to wall with controlling valves, and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		
Lavatory	30" x 24"	36" x 24"
Bowl	13" x 17" x 6 $\frac{1}{2}$ "	13" x 17" x 6 $\frac{1}{2}$ "
TELEGRAPHIC CODE.....		
UNRYR	UNSAI	
LIST PRICES		
Complete as specified, "A" quality	\$75.50	\$85.50
Complete as specified, "B" quality	64.40	71.40
Lavatory only, "A" quality	25.00	35.00
Lavatory only, "B" quality	17.50	24.50
Porcelain legs and supports, "A" quality, per pair	12.00	12.00
Porcelain legs and supports, "B" quality, per pair	8.40	8.40



PLATE 133-A

SPECIFICATIONS—"Ideal" solid porcelain "Brooklyn" lavatory, ("A" or "B") quality; plate 133-A; size (see below); with integral back; set upon porcelain legs. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass overflow grid and chain with plug and coupling; nickel-plated brass supply pipes to wall, with controlling valves, and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS	26" x 24"	30" x 24"
Lavatory.....	13"x17"x6 $\frac{1}{2}$ "	13"x17"x6 $\frac{1}{2}$ "
Bowl.....	UNFAX	UNFEZ
TELEGRAPHIC CODE		
LIST PRICES		
Complete as specified, "A" quality.....	\$58.00	\$63.00
Complete as specified, "B" quality.....	45.70	49.20
Lavatory only, "A" quality.....	29.00	34.00
Lavatory only, "B" quality.....	20.30	23.80
Porcelain legs and supports, "A" quality, per pair.....	12.00	12.00
Porcelain legs and supports, "B" quality, per pair.....	8.40	8.40



PLATE 148-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Alpena" square lavatory, ("A" or "B") quality; plate 148-A; size (see below); set upon single porcelain leg. Fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass "Triumph" pop-up waste fixture with china lever handle; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS	24"x22"	26"x21"
Lavatory.....	13"x17"x6 $\frac{1}{2}$ "	13"x17"x6 $\frac{1}{2}$ "
Bowl.....	UNRUP	UNSOR
TELEGRAPHIC CODE		
LIST PRICES		
Complete as specified, "A" quality.....	\$49.50	\$51.50
Complete as specified, "B" quality.....	41.25	42.65
Lavatory only, "A" quality.....	18.00	20.00
Lavatory only, "B" quality.....	12.60	14.00
Porcelain leg and supports, "A" quality.....	9.50	9.50
Porcelain leg and supports, "B" quality.....	6.65	6.65



PLATE 139-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Verona" lavatory, ("A" or "B") quality; plate 139-A; size (see below); set upon two porcelain legs. Fitted with nickel-plated brass combination supply and waste fitting with goose-neck supply and with china Fuller handles and china waste knob; nickel-plated brass $1\frac{1}{4}$ " basin trap to wall and nickel-plated brass supply pipes to wall.

DIMENSIONS	30"x24"	36"x24"
Lavatory.....	14"x18"x6 $\frac{1}{2}$ "	14"x18"x6 $\frac{1}{2}$ "
Bowl.....	UNSEM	UNSN
TELEGRAPHIC CODE		
LIST PRICES		
Complete as specified, "A" quality.....	\$73.50	\$83.50
Complete as specified, "B" quality.....	62.40	69.40
Lavatory only, "A" quality.....	25.00	35.00
Lavatory only, "B" quality.....	17.50	24.50
Porcelain legs and supports, "A" quality, per pair.....	12.00	12.00
Porcelain legs and supports, "B" quality, per pair.....	8.40	8.40



PLATE 151-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Cheltenham" lavatory, ("A" or "B") quality; plate 151-A; size (see below); set upon porcelain legs. Fitted with nickel-plated brass combination supply and waste fixture with china offset Fuller valve handles and china waste knob; nickel-plated brass supply pipes to wall and $1\frac{1}{4}$ " nickel-plated brass trap to wall.

DIMENSIONS	26"x21"	30"x24"
Lavatory.....	13"x17"x6 $\frac{1}{2}$ "	13"x17"x6 $\frac{1}{2}$ "
Bowl.....	UNKIG	UNKOH
TELEGRAPHIC CODE		
LIST PRICES		
Complete as specified, "A" quality.....	\$68.50	\$71.50
Complete as specified, "B" quality.....	58.90	61.00
Lavatory only, "A" quality.....	20.00	23.00
Lavatory only, "B" quality.....	14.00	16.10
Porcelain legs and supports, "A" quality, per pair.....	12.00	12.00
Porcelain legs and supports, "B" quality, per pair.....	8.40	8.40



PLATE 154-A

SPECIFICATIONS—"Ideal" solid porcelain "Reading" lavatory, ("A" or "B") quality; plate 154-A; size (see below); for corner, set upon porcelain leg. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass overflow grid and chain with plug and coupling; nickel-plated brass $1\frac{1}{4}$ " basin trap to wall and nickel-plated brass supply pipes to wall.

DIMENSIONS	24"x22" 13"x17"x6 $\frac{1}{4}$ " UPWYX	26"x22" 13"x17"x6 $\frac{1}{4}$ " UPSIP
Lavatory.....		
Bowl.....		
TELEGRAPHIC CODE.....		
LIST PRICES		
Complete as specified, "A" quality.....	\$42.50	\$44.50
Complete as specified, "B" quality.....	34.25	35.65
Lavatory only, "A" quality.....	18.00	20.00
Lavatory only, "B" quality.....	12.60	14.00
Porcelain leg and wall supports, "A" quality.....	9.50	9.50
Porcelain leg and wall supports, "B" quality.....	6.65	6.65



PLATE 155-A

SPECIFICATIONS—"Ideal" solid porcelain "Pennsylvania" lavatory, ("A" or "B") quality; plate 155-A; size (see below); with integral back and sides; set upon porcelain leg. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass $1\frac{1}{4}$ " basin trap to wall; nickel-plated brass supply pipes to wall and nickel-plated brass overflow grid and chain with plug and coupling.

DIMENSIONS	26"x22" 13"x17"x6 $\frac{1}{4}$ " UNKUJ	26"x22" 13"x17"x6 $\frac{1}{4}$ " UNKYK
Lavatory.....		
Bowl.....		
TELEGRAPHIC CODE.....		
LIST PRICES		
Complete as specified, "A" quality.....	\$52.50	\$54.50
Complete as specified, "B" quality.....	41.25	42.65
Lavatory only, "A" quality.....	28.00	30.00
Lavatory only, "B" quality.....	19.60	21.00
Porcelain leg and wall supports, "A" quality.....	9.50	9.50
Porcelain leg and wall supports, "B" quality.....	6.65	6.65



PLATE 158-A

SPECIFICATIONS—"Ideal" solid porcelain "Fulton" lavatory, ("A" or "B") quality; plate 158-A; size (see below); with integral back 8" high, set upon white painted iron legs. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass overflow grid with chain and plug and coupling; nickel-plated brass $1\frac{1}{4}$ " basin trap to wall and nickel-plated brass supply pipes to wall.

DIMENSIONS	24" x 21" 13"x17"x6 $\frac{1}{4}$ " UNLEG	26" x 21 $\frac{1}{2}$ " 13"x17"x6 $\frac{1}{4}$ " UNBOX
Lavatory.....		
Bowl.....		
Height of back.....	8"	8"
TELEGRAPHIC CODE.....		
LIST PRICES		
Complete as specified, "A" quality.....	\$42.50	\$48.50
Complete as specified, "B" quality.....	35.90	40.10
Lavatory only, "A" quality.....	22.00	28.00
Lavatory only, "B" quality.....	15.40	19.60

"A.R.C." SYSTEMS



PLATE 160-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Riverside" lavatory, ("A" or "B") quality; plate 160-A; size (see below); on square fluted pedestal. Fitted with nickel-plated brass combination supply and waste fitting with china Fuller offset handles and china waste knob; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS	30"x24" 17"x13"x6 $\frac{1}{4}$ " UVCAC	36"x24" 21"x15"x6 $\frac{1}{4}$ " UNBUZ
Lavatory.....		
Bowl.....		
TELEGRAPHIC CODE.....		
LIST PRICES		
Complete as specified, "A" quality.....	\$78.50	\$96.50
Complete as specified, "B" quality.....	65.50	78.50
Lavatory only, "A" quality.....	24.00	42.00
Lavatory only, "B" quality.....	16.80	29.40
Pedestal only, "A" quality.....	18.00	18.00
Pedestal only, "B" quality.....	12.60	12.60

Continued on next page



PLATE 161-A

SPECIFICATIONS—"Ideal" solid porcelain "Redfern" barber's lavatory, ("A" or "B") quality; plate 161-A; size 36" x 24"; on square fluted pedestal. Fitted with nickel-plated brass hot and cold combination shampoo fixtures with four-arm china tipped compression shampoo valve handles with rubber tube and nickel-plated brass shampoo spray; nickel-plated brass Fuller china handle basin cocks; nickel-plated brass standing overflow and waste with china index; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " trap to wall.

DIMENSIONS	
Lavatory.....	36" x 24"
Bowl.....	15" x 21" x 6 $\frac{1}{4}$ "
TELEGRAPHIC CODE URNYR	
LIST PRICES	
Complete as specified, "A" quality.....	\$107.00
Complete as specified, "B" quality.....	89.00
Lavatory only, "A" quality.....	42.00
Lavatory only, "B" quality.....	29.40
Pedestal only, "A" quality.....	18.00
Pedestal only, "B" quality.....	12.60

DIMENSIONS	
Lavatory.....	20" x 20"
Back.....	5" high
Bowl.....	10 $\frac{1}{2}$ " x 13 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ "
TELEGRAPHIC CODE UPJOH	
LIST PRICES	
Complete as specified, "A" quality.....	\$40.65
Complete as specified, "B" quality.....	34.65
Lavatory only, "A" quality.....	20.00
Lavatory only, "B" quality.....	14.00



PLATE 170-A

SPECIFICATIONS—"Ideal" solid porcelain "Car" lavatory, ("A" or "B") quality; plate 170-A; size 20" x 20" with integral back 5" high; set upon nickel-plated brass leg and iron concealed wall support. Fitted with nickel-plated brass low-down self-closing basin cock with china index; nickel-plated brass overflow grid and chain with plug and coupling; nickel-plated brass $1\frac{1}{4}$ " basin trap to wall; nickel-plated brass supply pipe to wall with controlling valve.

NOTE—This lavatory has splash rim in bowl.

"A.B.C." SYSTEMS



PLATE 162-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Highland" lavatory, ("A" or "B") quality; plate 162-A; size (see below); on plain square pedestal. Fitted with nickel-plated brass low-down compression cocks with china tips and china indexes; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		26" x 22"	28" x 22"
Lavatory.....	17" x 12 $\frac{1}{2}$ " x 6 $\frac{1}{2}$ "	17" x 13" x 6 $\frac{1}{2}$ "	
TELEGRAPHIC CODE URMEK		URNAK	
LIST PRICES			
Complete as specified, "A" quality.....	\$52.50	\$54.50	
Complete as specified, "B" quality.....	42.90	44.30	
Lavatory only, "A" quality.....	20.00	22.00	
Lavatory only, "B" quality.....	14.00	15.40	
Pedestal only, "A" quality.....	12.00	12.00	
Pedestal only, "B" quality.....	8.40	8.40	



PLATE 164-A

SPECIFICATIONS—"Ideal" solid porcelain "Warwick" roll rim lavatory, ("A" or "B") quality; plate 164-A; size 27" x 24"; on plain pedestal. Fitted with nickel-plated brass low-down compression basin cocks with four-arm china tipped handles, nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		27" x 24"	
Lavatory.....	13" x 18" x 6"		
TELEGRAPHIC CODE UTHAG			
LIST PRICES			
Complete as specified, "A" quality.....	\$58.50		
Complete as specified, "B" quality.....	47.10		
Lavatory only, "A" quality.....	22.00		
Lavatory only, "B" quality.....	15.40		
Plain pedestal only, "A" quality.....	16.00		
Plain pedestal only, "B" quality.....	11.20		

Continued on next page



PLATE 184-A

SPECIFICATIONS—"Ideal" solid porcelain "Duane" lavatory, ("A" or "B") quality; plate 184-A; size 24" x 21", with integral back 8" high, supported by nickel-plated brass wall brackets. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass supply pipes to wall; nickel-plated brass overflow grid and chain with plug and coupling; nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS	
Lavatory.....	24"x21"
Height of back.....	8"
Bowl.....	13"x17"x6 1/2"
TELEGRAPHIC CODE UNPIB	
LIST PRICES	
Complete as specified, "A" quality.....	\$44.25
Complete as specified, "B" quality.....	37.65
Lavatory only, "A" quality.....	22.00
Lavatory only, "B" quality.....	15.40



PLATE 175-A

SPECIFICATIONS—"Ideal" solid porcelain small square lavatory, ("A" or "B") quality; plate 175-A; size 20" x 18", with 6" integral backs with integral porcelain extension for support. Fitted with nickel-plated brass Fuller basin cocks with china handles; nickel-plated brass chainstay, chain, plug and coupling; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" trap to wall.

DIMENSIONS	
Lavatory.....	20"x18"
Height of back.....	6"
Bowl.....	14 1/2"x11"x6"
TELEGRAPHIC CODE UTXEX	
LIST PRICES	
Complete as specified, "A" quality.....	\$27.90
Complete as specified, "B" quality.....	25.15
Lavatory only, no fittings, "A" quality.....	14.00
Lavatory only, no fittings, "B" quality.....	11.25



PLATE 182-A

SPECIFICATIONS—"Ideal" solid porcelain "Recess" lavatory, ("A" or "B") quality; plate 182-A; size (see below); with integral back and sides 8" high, supported by concealed hangers. Fitted with nickel-plated brass Fuller cocks with china handles and indexes; nickel-plated brass standing overflow and waste with china waste knob; nickel-plated brass supply pipes and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS	
Lavatory.....	26"x21" 31"x21"
Height of back and sides.....	8" 8"
Bowl.....	13"x17"x6 1/2" 13"x17"x6 1/2"
TELEGRAPHIC CODE UNLIH UNCOZ	
LIST PRICES	
Complete as specified, "A" quality.....	\$46.20 \$51.20
Complete as specified, "B" quality.....	38.70 42.20
Lavatory only, "A" quality.....	25.00 30.00
Lavatory only, "B" quality.....	17.50 21.00

"A.B.C." SYSTEMS



PLATE 183-A

SPECIFICATIONS—"Ideal" solid porcelain double bowl recess lavatory, ("A" or "B") quality; plate 183-A; size 48" x 22", with integral back and sides; set on porcelain leg with wall supports. Fitted with two pairs of nickel-plated brass low-down compression cocks with china indexes; two nickel-plated brass standing overflow and wastes with china knobs; two pairs of nickel-plated brass supply pipes to wall and two nickel-plated brass 1 1/4" basin traps to wall.

DIMENSIONS	
Length.....	48"
Front to back.....	22"
Height of back and sides.....	8"
Apron.....	8"
TELEGRAPHIC CODE URRAM	
LIST PRICES	
Complete as specified, "A" quality.....	\$130.50
Complete as specified, "B" quality.....	102.15
Lavatory only, "A" quality.....	85.00
Lavatory only, "B" quality.....	59.50
Porcelain leg with wall supports, "A" quality.....	9.50
Porcelain leg with wall supports, "B" quality.....	6.65

Continued on next page



PLATE 190-A

SPECIFICATIONS—"Ideal" solid porcelain "Crescent" corner lavatory ("A" or "B") quality; plate 190-A; size 19" x 19", with integral back 6" high; set upon concealed wall hangers. Fitted with nickel-plated brass low-down compression cocks with china indexes; china overflow grid and nickel-plated brass chain with plug and coupling; nickel-plated brass supply pipes to wall; nickel-plated brass $\frac{1}{4}$ " basin trap to wall.

DIMENSIONS	
Length along sides.....	19"
Height integral back.....	6"
Bowl.....	11 $\frac{1}{2}$ " x 15" x 5 $\frac{1}{2}$ "
TELEGRAPHIC CODE	UNLAF
LIST PRICES	
Complete as specified, "A" quality.....	\$39.70
Complete as specified, "B" quality.....	32.50
Lavatory only, "A" quality.....	24.00
Lavatory only, "B" quality.....	16.80



PLATE 213-A

SPECIFICATIONS—"Ideal" solid porcelain "Jamestown" square lavatory, ("A" or "B") quality; plate 213-A; size 26" x 22", with integral back 8" high; set upon one porcelain leg. Fitted with nickel-plated brass Fuller basin cocks with china handles; nickel-plated brass $\frac{1}{4}$ " basin trap to wall; china overflow grid and chain with nickel-plated brass plug and coupling; nickel-plated brass supply pipes to wall with air chambers.

DIMENSIONS	
Lavatory across back.....	26"
Back to front.....	22"
Bowl.....	16 $\frac{1}{2}$ " x 12 $\frac{1}{2}$ " x 6 $\frac{1}{2}$ "
Height integral back.....	8"
Apron.....	6 $\frac{1}{2}$ "
TELEGRAPHIC CODE	UNPEK
LIST PRICES	
Complete as specified, "A" quality.....	\$56.00
Complete as specified, "B" quality.....	44.75
Lavatory only, "A" quality.....	28.00
Lavatory only, "B" quality.....	19.60
Porcelain leg and supports, "A" quality.....	9.50
Porcelain leg and supports, "B" quality.....	6.65
China overflow grid.....	.50

"A.B.C." SYSTEMS



PLATE 208-A

SPECIFICATIONS—"Ideal" solid porcelain "Clivedale" lavatory, ("A" or "B") quality; with integral back 6" high; plate 208-A; size 22" x 19"; set on porcelain leg and fitted with nickel-plated brass "Junior" combination supply fixture with Fuller china valve handles, chainstay, chain, plug and coupling; nickel-plated brass supply pipes to wall and nickel-plated brass $\frac{1}{4}$ " trap to wall.

DIMENSIONS	
Lavatory.....	22" x 19"
Height integral back.....	6"
Bowl.....	15" x 11 $\frac{1}{2}$ " x 5"
TELEGRAPHIC CODE	URPAL
LIST PRICES	
Complete as specified, "A" quality.....	\$50.00
Complete as specified, "B" quality.....	40.55
Lavatory only, "A" quality.....	22.00
Lavatory only, "B" quality.....	15.40
Porcelain leg and wall supports, "A" quality.....	9.50
Porcelain leg and wall supports, "B" quality.....	6.65



PLATE 212-A

SPECIFICATIONS—"Ideal" solid porcelain "Hudson" lavatory, ("A" or "B") quality; plate 212-A; size (see below); with integral back; set upon porcelain leg. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass supply pipes to floor; nickel-plated brass $\frac{1}{4}$ " basin trap to floor and nickel-plated brass standing overflow and waste with china waste knob.

DIMENSIONS	
Lavatory.....	24" x 21"
Bowl.....	16" x 12 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ "
Height of back.....	8"
TELEGRAPHIC CODE	UNLOJ UNLUK
LIST PRICES	
Complete as specified, "A" quality.....	\$50.50
Complete as specified, "B" quality.....	41.05
Lavatory only, "A" quality.....	22.00
Lavatory only, "B" quality.....	15.40
Porcelain leg and supports, "A" quality.....	9.50
Porcelain leg and supports, "B" quality.....	6.65

Continued on next page



PLATE 215-A

SPECIFICATIONS—"Ideal" solid porcelain "Trent" round-front lavatory, ("A" or "B") quality; plate 215-A; size 26" x 22", with integral back 8" high; set upon porcelain leg. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass supply pipes to wall; nickel-plated brass 1/4" trap to wall and nickel-plated brass overflow grid and chain with plug and coupling.

DIMENSIONS

Length over all.....	26"
Back to front.....	22"
Height back at center.....	8"
Bowl.....	17"x12 1/4"x6"
TELEGRAPHIC CODE.....	UPZYB

LIST PRICES

Complete as specified, "A" quality.....	\$48.50
Complete as specified, "B" quality.....	36.45
Lavatory only, "A" quality.....	24.00
Lavatory only, "B" quality.....	14.80
Porcelain leg and supports, "A" quality.....	9.50
Porcelain leg and supports, "B" quality.....	6.65



PLATE 217-A

SPECIFICATIONS—"Ideal" solid porcelain "Trent" corner lavatory, ("A" or "B") quality; plate 217-A; size 23" x 23", with integral back 8" high; set upon porcelain leg. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass supply pipes to wall; nickel-plated brass 1/4" basin trap to wall and nickel-plated brass overflow grid and chain with plug and coupling.

DIMENSIONS

Length along sides.....	23"
Height of back.....	8"
Bowl.....	16" x 12" x 6"
TELEGRAPHIC CODE.....	UNBYB

LIST PRICES

Complete as specified, "A" quality.....	\$52.50
Complete as specified, "B" quality.....	41.25
Lavatory only, "A" quality.....	28.00
Lavatory only, "B" quality.....	19.60
Porcelain leg and supports, "A" quality.....	9.50
Porcelain leg and supports, "B" quality.....	6.65



PLATE 221-A

SPECIFICATIONS—"Ideal" solid porcelain kitchen lavatory, ("A" or "B") quality; plate 221-A; with integral back; set upon galvanized iron leg and frame. Fitted with nickel-plated brass compression combination hot and cold supply fittings with china indexes; nickel-plated brass overflow grid and chain with plug and coupling and nickel-plated brass 1/4" basin trap to wall.

DIMENSIONS

Width across back.....	21"
Top of back to bottom of outside.....	17"
Bowl.....	16"x17 1/4"x8"
TELEGRAPHIC CODE.....	UNMYM

LIST PRICES

Complete as specified, "A" quality.....	\$55.35
Complete as specified, "B" quality.....	47.85
Lavatory only, "A" quality.....	25.00
Lavatory only, "B" quality.....	17.50

"A.B.C." SYSTEMS



PLATE 225-A

SPECIFICATIONS—"Ideal" solid porcelain "Clinic" square pattern lavatory, ("A" or "B") quality; plate 225-A; size 37" x 24"; supported by nickel-plated brass legs. Fitted with nickel-plated brass pedal valve hot and cold supply fittings and nickel-plated brass 1/4" basin trap to wall with chain and plug.

DIMENSIONS

Length over all.....	37"
Front to back.....	24"
Apron.....	7"
Bowl.....	17"x13"x6 1/4"
TELEGRAPHIC CODE.....	UPTYV

LIST PRICES

Complete as specified, "A" quality.....	\$84.60
Complete as specified, "B" quality.....	72.60
Lavatory only, "A" quality.....	40.00
Lavatory only, "B" quality.....	28.00

Continued on next page



PLATE 231-A

SPECIFICATIONS—"Ideal" solid porcelain "Barracks" roll rim lavatories, ("A" or "B") quality; in battery of four lavatories; plate 231-A; with integral china soap holders. Fitted with galvanized iron hot and cold supply pipes with clamps and connections complete, including nickel-plated brass faucets; each lavatory set upon galvanized iron leg with supporting frame to wall; nickel-plated brass overflow grids and chains with plugs and couplings and with continuous waste, vented to wall, with trap outlet to floor.

NOTE—These lavatories can also be furnished in "Buff" ware or "Ecru" ware.

DIMENSIONS

Each lavatory, along wall.....	21"
From wall to front.....	19"
Outside.....	17½" x 15½"
Depth inside.....	8"

LIST PRICES

Complete as specified, "A" quality.....	\$160.60
Complete as specified, "B" quality.....	139.00
Each lavatory only, "A" quality.....	18.00
Each lavatory only, "B" quality.....	12.60
Each lavatory only, "Buff" ware.....	11.00
Each lavatory only, "Ecru" ware.....	12.60



PLATE 233-A

SPECIFICATIONS—"Ideal" solid porcelain "Barracks" lavatories, ("A" or "B") quality; plate 233-A; in battery of eight lavatories, with integral soap holders. Fitted with galvanized iron frames with hot and cold supply pipes and faucets with connections complete; nickel-plated brass overflow grids and chains with plugs and couplings and nickel-plated brass continuous waste without outlet trap to floor.

NOTE—These lavatories can also be furnished in "Buff" ware or "Ecru" ware.

DIMENSIONS

Each lavatory along wall.....	21"
From wall to front.....	19"
Outside.....	17½" x 15½"
Depth inside.....	8"

LIST PRICES

Complete as specified, "A" quality.....	\$304.00
Complete as specified, "B" quality.....	260.80
Each lavatory only, "A" quality.....	18.00
Each lavatory only, "B" quality.....	12.60
Each lavatory only, "Buff" ware.....	11.00
Each lavatory only, "Ecru" ware.....	12.60



PLATE 234-A

SPECIFICATIONS—"Ideal" solid porcelain "Marine" lavatories, ("A" or "B") quality; in battery of two double-bowl lavatories; plate 234-A; on white painted iron legs and frames. Fitted with nickel-plated brass double compression china indexed cocks for hot and cold water; nickel-plated brass soap cups with spring clamps, less supply pipes and traps.

NOTE—Supply pipes and outlet fittings not furnished unless specified.

NOTE—Lavatories can be furnished in "Buff" ware also.

DIMENSIONS

Each double lavatory.....	36"x20"
Depth bowls inside.....	16½"x14¾"x6½"

LIST PRICES

Complete as specified, "A" quality.....	\$134.00
Complete as specified, "B" quality.....	110.00
Each double bowl lavatory only, "A" quality.....	40.00
Each double bowl lavatory only, "B" quality.....	28.00
Each double bowl lavatory only, "Buff" ware.....	24.00

"A.B.C." SYSTEMS



PLATE 228-A

SPECIFICATIONS—"Ideal" solid porcelain "Weston" roll rim square lavatories, ("A" or "B") quality; in battery of four lavatories; plate 228-A; set upon white painted iron frames. Each pair of lavatories fitted with nickel-plated brass hot and cold supply pipes to the floor and nickel-plated brass waste pipes and traps to the floor; nickel-plated brass low-down compression basin cocks with china indexes and nickel-plated brass overflow grids and chains with plugs and couplings.

DIMENSIONS

Each lavatory.....	26" x 21"
Bowl.....	13" x 17" x 6½"
Battery, over all.....	52" x 42"

LIST PRICES

Complete as specified, "A" quality.....	\$170.00
Complete as specified, "B" quality.....	146.00
Each lavatory only, "A" quality.....	20.00
Each lavatory only, "B" quality.....	14.00

Continued on next page



PLATE 244-A

SPECIFICATIONS—"Ideal" solid porcelain "Romana" roll rim double-bowl barber's lavatory, ("A" or "B") quality; plate 244-A; set upon three porcelain legs. Fitted with two sets of nickel-plated brass hot and cold combination supply and shampoo fixtures with Fuller china handle basin cocks, four-arm china tipped compression shampoo valve handles and rubber tubes with nickel-plated brass shampoo sprays, two pairs nickel-plated brass supply pipes to wall and two nickel-plated brass 1 1/4" basin traps to wall.

DIMENSIONS	
Lavatory.....	53"x24"
Apron.....	6 1/2"
Bowls.....	20 1/2"x14"x6 1/4"
TELEGRAPHIC CODE	URSAN
LIST PRICES	
Complete as specified, "A" quality.....	\$182.00
Complete as specified, "B" quality.....	155.60
Lavatory only, "A" quality.....	70.00
Lavatory only, "B" quality.....	49.00
Three porcelain legs and wall supports, "A" quality.....	18.00
Three porcelain legs and wall supports, "B" quality.....	12.60



PLATE 243-A

SPECIFICATIONS—"Ideal" solid porcelain double-bowl "Valdora" roll rim lavatory, ("A" or "B") quality; plate 243-A; set on two porcelain pedestals. Fitted with two pairs of nickel-plated low-down compression cocks with china indexes; two nickel-plated brass standing overflow and wastes with china knobs; two pairs nickel-plated brass supply pipes to wall and two nickel-plated brass 1 1/4" basin traps to wall.

DIMENSIONS	
Lavatory.....	53"x24"
Apron.....	6 1/2"
Bowls.....	20 1/2"x14"x6 1/4"
TELEGRAPHIC CODE	URRIP
LIST PRICES	
Complete as specified, "A" quality.....	\$130.00
Complete as specified, "B" quality.....	101.80
Double bowl lavatory only, "A" quality.....	70.00
Double bowl lavatory only, "B" quality.....	49.00
Two porcelain pedestals only, "A" quality.....	24.00
Two porcelain pedestals only, "B" quality.....	16.80



PLATE 241-A

SPECIFICATIONS—"Ideal" solid porcelain "Saratoga" double-bowl roll rim lavatory, ("A" or "B") quality; plate 241-A; set on porcelain legs. Fitted with two pairs nickel-plated brass low-down compression cocks with china indexes; two pairs nickel-plated brass supply pipes to wall; two nickel-plated brass standing overflow and wastes with china waste knobs and two nickel-plated brass 1 1/4" basin traps to wall.

NOTE—This lavatory can be furnished 72" long with three bowls. (Price on application.)

DIMENSIONS	
Lavatory, length over all.....	48"
Front to back.....	22"
Bowls.....	17"x13"x6 1/4"
TELEGRAPHIC CODE	UNDUC
LIST PRICES	
Complete as specified, "A" quality.....	\$114.00
Complete as specified, "B" quality.....	90.60
Double bowl lavatory only, "A" quality.....	60.00
Double bowl lavatory only, "B" quality.....	42.00
Three porcelain legs and wall supports, "A" quality.....	18.00
Three porcelain legs and wall supports, "B" quality.....	12.60

"A.B.C." SYSTEMS



PLATE 250-A

SPECIFICATIONS—"Ideal" solid porcelain "Rowena" roll rim combination lavatory and dressing table, ("A" or "B") quality; plate 250-A; set on three porcelain legs. Fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS	
Lavatory.....	52"x24"
Apron.....	6 1/2"
Bowl.....	20"x13 1/2"x6 1/4"
TELEGRAPHIC CODE	UTLIM
LIST PRICES	
Complete as specified, "A" quality.....	\$103.00
Complete as specified, "B" quality.....	77.10
Lavatory only, "A" quality.....	65.00
Lavatory only, "B" quality.....	44.50
Three porcelain legs and wall supports, "A" quality.....	18.00
Three porcelain legs and wall supports, "B" quality.....	12.60

Continued on next page



PLATE 606-A

SPECIFICATIONS—"Impervio" vitreous china roll rim "Andover" lavatory; plate 606-A; size 24" x 20"; set on single china leg. Fitted with nickel-plated brass compression cocks with china indexes; nickel-plated brass overflow grid, chain, plug and coupling; nickel-plated brass supply pipes to floor and nickel-plated brass 1 1/4" basin trap to floor.

DIMENSIONS	
Lavatory slab.....	24"x20"
Bowl.....	16"x12 1/4"x6"
Apron.....	4"
TELEGRAPHIC CODE	USPEN
LIST PRICES	
Complete as specified.....	\$35.95
Lavatory only.....	16.00
Vitreous china leg only.....	4.00



PLATE 609-A

SPECIFICATIONS—"Impervio" vitreous china roll rim round front "Morningside" lavatory; plate 609-A; size 24" x 20"; on single china leg. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass chainstay, chain, plug and coupling; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS	
Slab.....	24"x20"
Bowl.....	17"x11 1/4"x6 1/4"
Apron.....	4"
TELEGRAPHIC CODE	USPIP
LIST PRICES	
Complete as specified.....	\$34.50
Lavatory only.....	16.00
Vitreous china leg only.....	4.00



PLATE 607-A

SPECIFICATIONS—"Impervio" vitreous china roll rim "Milton" lavatory; plate 607-A; size (see below); set on single china leg. Fitted with nickel-plated brass Fuller cocks with china handles and china bases; nickel-plated brass "Triumph" pop-up waste with china lever handle; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS		
Lavatory slab.....	24" x 20"	28" x 22"
Bowl.....	16"x12 1/4"x16"	17"x13"x6 1/4"
TELEGRAPHIC CODE	UTDAC	UTDED
LIST PRICES		
Complete as specified.....	\$43.00	\$52.50
Lavatory only.....	16.00	25.50
Vitreous china leg only.....	4.00	4.00]



PLATE 614-A

SPECIFICATIONS—"Impervio" vitreous china "Colonial" lavatory; plate 614-A; size 30 1/2" x 22 1/4", with 8" high integral back; set on china legs and fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass "Triumph" pop-up waste with china lever handle; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS	
Lavatory.....	30 1/2"x22 1/4"
Bowl.....	18 1/4"x14"x6"
Height of back.....	8"
Apron.....	4"
TELEGRAPHIC CODE	UTSIT
LIST PRICES	
Complete as specified.....	\$80.00
Lavatory only, no fittings.....	58.00
Vitreous china legs per pair.....	8.00



PLATE 661 1/2-A

NOTE—This integral china concealed style of water supply to the bowl may be furnished upon any "Impervio" vitreous china pedestal lavatory or the "Bellemeade" lavatory on lega. Specify as follows: "Lavatory to be made with plate 661 1/2-A, integral china supply, and fitted with combination supply and pop-up waste fitting with china Fuller valve handles and four-arm china tipped waste handle."

LIST PRICES

Add to regular list price of lavatory desired made this way..... \$ 5.00
The list price on special fittings as specified for any lavatory made this way is 22.00



PLATE 671 1/2-A

NOTE—This integral china concealed style of water supply to the bowl may be furnished upon any "Impervio" vitreous china pedestal lavatory or the "Bellemeade" lavatory on lega. Specify as follows: "Lavatory to be made with plate 671 1/2-A, integral china supply, and fitted with combination supply and pop-up waste fitting with solid china compression valve handles and waste handle."

LIST PRICES

Add to regular list price of lavatory desired made this way..... \$ 5.00
The list price on special fittings as specified for any lavatory made this way is 21.00



PLATE 645-A

SPECIFICATIONS—"Impervio" vitreous china "Baltimore" oval lavatory; plate 645-A; size (see below); on fluted round pedestal. Fitted with nickel-plated brass combination supply and waste fitting with compression valves with four-arm china handles and china waste knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory slab.....	27"x22"	33"x24"
Bowl.....	17"x13"x6"	17"x13"x6 1/4"

TELEGRAPHIC CODE

UTZOC USREP

LIST PRICES

Complete as specified.....	\$68.50	\$86.50
Lavatory only.....	21.00	39.00
Pedestal with rod.....	11.00	11.00

"A.B.C." SYSTEMS



PLATE 655-A

SPECIFICATIONS—"Impervio" vitreous china "Improved" lavatory; plate 655-A; size (see below); on china pedestal. Fitted with nickel-plated brass combination supply and pop-up waste fixture with china Fuller valve handles on supplies and china lever handle on waste; nickel-plated brass supply pipes to wall and 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory only.....	27"x23"	30"x24"	33"x24"
Bowl.....	16"x12"x6"	18 1/4"x13 1/4"x6"	18 1/4"x13 1/4"x6"

TELEGRAPHIC CODE

USSIS USZEX UTBBB

LIST PRICES

Complete as specified.....	\$75.00	\$78.50	\$88.50
Lavatory only.....	25.50	29.00	39.00
Pedestal with rod.....	11.00	11.00	11.00



PLATE 636-A

SPECIFICATIONS—"Impervio" vitreous china "Swellmore" oval lavatory; plate 636-A; size 33" x 24"; set on china swell pedestal. Fitted with nickel-plated brass combination supply and waste fitting with Fuller china offset handles and china waste knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory slab.....	33"x24"
Bowl.....	17"x13"x6"
Apron.....	4"

TELEGRAPHIC CODE

UTHEH

LIST PRICES

Complete as specified.....	\$86.50
Lavatory only.....	39.00
Pedestal with rod.....	11.00

Continued on next page



PLATE 656-A

SPECIFICATIONS—"Impervio" vitreous china "Girard" lavatory, on fluted china pedestal; plate 656-A; size (see below). Fitted with nickel-plated brass Fuller cocks with china handles and china bases; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS			
Lavatory slab.....	27"x23"	30"x24"	33"x24"
Bowl.....	16"x12"x6"	18 $\frac{1}{2}$ "x13 $\frac{1}{4}$ "x6"	18 $\frac{1}{2}$ "x13 $\frac{1}{4}$ "x6"
TELEGRAPHIC CODE.....			
USVYX	USSUV	USXYC	
LIST PRICES			
Complete as specified.....	\$57.50	\$61.00	\$71.00
Lavatory only.....	25.50	29.00	39.00
Pedestal only.....	11.00	11.00	11.00



PLATE 658-A

SPECIFICATIONS—"Impervio" vitreous china "Kendron" lavatory; plate 658-A; size 30" x 24"; on special china pedestal. Fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		
Lavatory slab.....	30"x24"	
Bowl.....	17"x13"x6 $\frac{1}{4}$ "	
Apron.....	4"	
TELEGRAPHIC CODE.....		UTBYG
LIST PRICES		
Complete as specified.....	\$62.50	
Lavatory only.....	31.50	
Pedestal only.....	11.00	



PLATE 660-A

SPECIFICATIONS—"Impervio" vitreous china roll rim "Linden" lavatory; plate 660-A; size 30" x 24"; on square fluted pedestal. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		
Lavatory slab.....	30"x24"	
Bowl.....	19"x14"x6"	
Apron.....	4"	
TELEGRAPHIC CODE.....		USPYT
LIST PRICES		
Complete as specified.....	\$58.00	
Lavatory only.....	29.00	
Pedestal only.....	11.00	



PLATE 664-A

SPECIFICATIONS—"Impervio" vitreous china roll rim "Emerson" lavatory; plate 664-A; size 26" x 24"; on fluted china pedestal. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass pop-up waste with china lever handle; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		
Lavatory slab.....	26"x24"	
Bowl.....	16 $\frac{1}{4}$ "x12 $\frac{3}{4}$ "x6"	
Apron.....	4"	
TELEGRAPHIC CODE.....		UTROT
LIST PRICES		
Complete as specified.....	\$51.50	
Lavatory only.....	21.00	
Pedestal only.....	11.00	



PLATE 665-A

SPECIFICATIONS—"Impervio" vitreous china roll rim "Valora" lavatory; plate 665-A; size (see below); on plain china pedestal. Fitted with nickel-plated brass Puller cocks with china handles; nickel-plated brass standing overflow and waste with china index; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory slab	28"x22"	30"x24"	33"x24"
Bowl	17"x13"x6"	17"x13 1/4"x6"	17"x13 1/4"x6"
Apron	4"	4"	4"
TELEGRAPHIC CODE	UTGYL	UTJAH	UTJEJ
LIST PRICES			
Complete as specified	\$56.50	\$60.00	\$70.00
Lavatory only	25.50	29.00	39.00
Pedestal only	11.00	11.00	11.00



PLATE 685-A

SPECIFICATIONS—"Impervio" vitreous china "Glendale" lavatory; plate 685-A; size 24" x 20", with integral back 6" high; on vitreous china leg. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass overflow grid and chain with plug and coupling; nickel-plated brass supply pipes to floor and nickel-plated brass 1 1/4" basin trap to floor.

DIMENSIONS

Lavatory only	24"x20"
Back	6" high
Bowl	16"x12 1/4"x6"
Apron	4"
TELEGRAPHIC CODE	USMAK
LIST PRICES	
Complete as specified	\$41.35
Lavatory only	22.00
Vitreous china leg only	4.00



PLATE 671-A

SPECIFICATIONS—"Impervio" vitreous china "Bellemeade" oval lavatory; plate 671-A; size 33" x 24"; on plain round pedestal. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

NOTE—This lavatory has a splash rim inside of bowl.

DIMENSIONS

Lavatory slab	33"x24"
Bowl	20"x14"x6 1/4"
TELEGRAPHIC CODE	UTRER
LIST PRICES	
Complete as specified	\$68.00
Lavatory only	39.00
Pedestal only	11.00



PLATE 675-A

SPECIFICATIONS—"Impervio" vitreous china roll rim square "Bellemeade" lavatory; plate 675-A; size (see below); on plain square pedestal. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass "Knickerbocker" pop-up waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

NOTE—This lavatory has a splash rim inside of bowl.

DIMENSIONS

Lavatory	24"x20"	26"x22"	30"x24"
Bowl	16"x12 1/4"x6"	16"x12 1/4"x6"	20"x14"x6"
TELEGRAPHIC CODE	UTZYP	UVBAB	UVBEA
LIST PRICES			
Complete as specified	\$45.00	\$50.00	\$58.00
Lavatory only	16.00	21.00	29.00
Pedestal only	11.00	11.00	11.00



PLATE 689-A

SPECIFICATIONS—"Impervio" vitreous china "Columbia" lavatory; plate 689-A; size 28" x 22", with 7" high integral back; with integral interior drainways into overflow from soap and drip trays of china on top of slab. Fitted with nickel-plated brass combination pop-up waste and supply fixture with four-arm china handles on compression supply valves and waste, nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory only.....	28" x 22"
Back.....	7" high
Bowl.....	17" x 13" x 6 1/2"
Apron.....	4"
TELEGRAPHIC CODE.....	
USTOV	
LIST PRICES	
Complete as specified.....	\$82.50
Lavatory only.....	38.00
Vitreous china fluted leg only.....	5.00
China drip and soap trays, each.....	.50



PLATE 690-A

SPECIFICATIONS—"Impervio" vitreous china "Pittsburg" lavatory; plate 690-A; size 24" x 20", with integral back 6" high; on vitreous china leg. Fitted with nickel-plated brass Fuller basin cocks with china handles; nickel-plated brass chainstay and chain, with plug and coupling; nickel-plated brass supply pipes to wall, and nickel-plated brass 1 1/4-inch basin trap to wall.

DIMENSIONS	
Lavatory slab.....	24" x 20"
Back.....	6" high
Bowl.....	17" x 13" x 6 1/2"
Apron.....	4"
TELEGRAPHIC CODE.....	
USXAV	
LIST PRICES	
Complete as specified.....	\$41.90
Lavatory only.....	22.00
Vitreous china leg only.....	4.00

"A.B.C." SYSTEMS



PLATE 691-A

SPECIFICATIONS—"Impervio" vitreous china round front "Broadway" lavatory; plate 691-A; size 24" x 23", with integral back and integral shelf extending to wall; set upon fluted china leg. Fitted with nickel-plated brass combination supply fixture, with china indexed push button valves; curved supply spout with chain, plug and coupling, and nickel-plated brass 1 1/4" basin trap to wall.

NOTE—The "Broadway" lavatory has a splash rim inside of the bowl; integral shelf at top is for holding soaps, cups, drinking mugs or other toilet articles.

DIMENSIONS	
Width along wall.....	24"
Wall to front over all.....	23"
Bowl.....	17" x 13" x 6 1/2"
Integral back.....	6" high
Integral shelf.....	4" front to back
TELEGRAPHIC CODE.....	
USVAS	
LIST PRICES	
Complete as specified.....	\$77.50
Lavatory only.....	36.00
Vitreous china fluted leg only.....	5.00

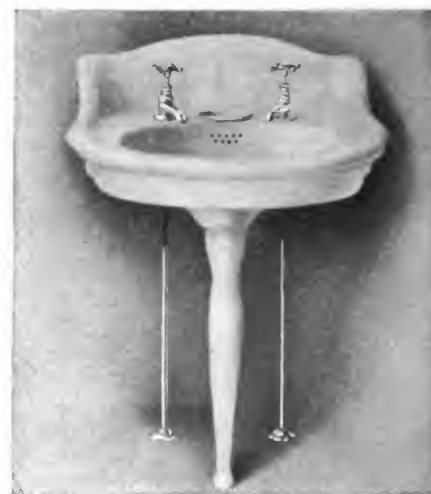


PLATE 688-A

SPECIFICATIONS—"Impervio" vitreous china "Trent" lavatory; plate 688-A; size 25" x 23", with integral back 6 1/2" high; perforated overflow opening in back of bowl. Set on vitreous china leg and fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass supply pipes to floor; nickel-plated brass 1 1/4" basin trap to floor, and with china soap dish set into large overflow opening in top of slab, and with nickel-plated brass chainstay, chain, plug and coupling.

DIMENSIONS	
Lavatory slab.....	25" x 23"
Back.....	6 1/2" high
Bowl.....	17" x 12" x 6"
Apron.....	3 3/4"
TELEGRAPHIC CODE.....	
USMON	
LIST PRICES	
Complete as specified.....	\$46.40
Lavatory.....	28.00
Vitreous china leg only.....	4.00

Continued on next page



PLATE 693-A

SPECIFICATIONS—"Impervio" vitreous china "Bellemeade" lavatory; plate 693-A; size 24" x 22", with integral back 7" high; set upon fluted china leg. Fitted with nickel-plated brass low-down compression cocks with china indexes; nickel-plated brass chainstay, chain, plug and coupling; nickel-plated brass supply pipes to wall and nickel-plated brass 1/4" basin trap to wall.

NOTE—This lavatory has a splash rim inside of bowl.

DIMENSIONS	
Lavatory slab.....	24"x22"
Integral back.....	7" high
Bowl.....	16"x12 1/2"x6"
TELEGRAPHIC CODE	
USSOT	
LIST PRICES	
Complete as specified.....	\$41.90
Lavatory only.....	23.00
Vitreous china fluted leg only.....	5.00



PLATE 696-A

SPECIFICATIONS—"Impervio" vitreous china roll-rim "Bellemeade" lavatory; plate 696-A; size (see below); on fluted china leg. Fitted with nickel-plated brass lowdown compression cocks with china indexes; nickel-plated brass "Knickerbocker" pop-up waste fixture with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1/4" basin trap to wall.

NOTE—This lavatory has a splash rim inside the bowl and concealed patent overflow.

DIMENSIONS			
Lavatory slab.....	24"x21"	27"x21"	30"x22"
Bowl.....	16"x12 1/2"x6"	16"x12 1/2"x6"	16"x12 1/2"x6"
TELEGRAPHIC CODE			
UVBUG		UVBYU	UTLYE
LIST PRICES			
Complete as specified.....	\$40.00	\$49.50	\$53.00
Lavatory only.....	17.00	26.50	30.00
Vitreous china fluted leg only.....	5.00	5.00	5.00

"A.R.C." SYSTEMS



PLATE 695-A

SPECIFICATIONS—"Impervio" vitreous china "Bellemeade" lavatory; plate 695-A; size (see below); with 7" high integral back; set upon china leg. Fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass "Knickerbocker" pop-up waste fixture with china waste knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1/4" basin trap to wall.

NOTE—This lavatory has a splash rim inside the bowl, and concealed patent overflow.

DIMENSIONS			
Lavatory slab.....	24"x21"	27"x21"	30"x22"
Integral back.....	7" high	7" high	7" high
Bowl.....	16"x12 1/2"x6"	16"x12 1/2"x6"	16"x12 1/2"x6"
TELEGRAPHIC CODE			
UVBID		UVBOF	UTLUP
LIST PRICES			
Complete as specified.....	\$47.00	\$59.00	\$73.50
Lavatory only.....	23.00	35.00	49.50
Vitreous china leg only.....	4.00	4.00	4.00



PLATE 697-A

SPECIFICATIONS—"Impervio" vitreous china "Bellemeade" corner lavatory; plate 697-A; size 19 1/2" x 19 1/2", with integral back 6" high, supported by concealed wall hangers, and fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass "Knickerbocker" pop-up waste fixture with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1/4" basin trap to wall.

NOTE—This lavatory has a splash rim inside the bowl, and concealed patent overflow.

DIMENSIONS			
Length along sides.....	19 1/2"		
Bowl.....	15 1/2"x12 1/2"x7"		
Back.....	6" high		
TELEGRAPHIC CODE			
		UTNAM	
LIST PRICES			
Complete as specified.....	\$47.00		
Lavatory with concealed hangers only.....	27.00		

Continued on next page



PLATE 700-A

SPECIFICATIONS—"Impervio" vitreous china "Jefferson" corner lavatory; plate 700-A; size $19\frac{1}{2}" \times 19\frac{1}{2}"$, with integral back 6" high; on vitreous china leg. Fitted with nickel-plated brass No. 5 self-closing basin cocks, with china indexes; nickel-plated brass $1\frac{1}{4}"$ basin trap to wall; nickel-plated brass supply pipes to wall, and nickel-plated brass chainstay and chain, with plug and coupling.

DIMENSIONS	
Length along sides.....	$19\frac{1}{2}"$
Bowl.....	$15\frac{1}{2}" \times 12\frac{1}{2}" \times 7"$
Back.....	6" high
Apron.....	4"
TELEGRAPHIC CODE	
USMEL	
LIST PRICES	
Complete as specified.....	\$47.55
Lavatory only.....	27.00
Vitreous china leg only.....	4.00



PLATE 701-A

SPECIFICATIONS—"Impervio" vitreous china "Harlem" roll-rim corner lavatory; plate 701-A; size $19\frac{1}{2}" \times 19\frac{1}{2}"$, set upon china leg. Fitted with nickel-plated brass lowdown compression cocks with china indexes; nickel-plated brass chainstay and chain, with plug and coupling; nickel-plated brass supply pipes to wall, and nickel-plated brass $1\frac{1}{4}"$ basin trap to wall.

DIMENSIONS	
Length along sides.....	$19\frac{1}{2}"$
Bowl.....	$15\frac{1}{2}" \times 12\frac{1}{2}" \times 7"$
Apron.....	4"
TELEGRAPHIC CODE	
USTAV	
LIST PRICES	
Complete as specified.....	\$39.90
Lavatory only.....	22.00
Vitreous china leg only.....	4.00



PLATE 752-A

SPECIFICATIONS—"Impervio" vitreous china roll-rim "Eldoro" lavatory; plate 752-A; size (see below), set upon nickel-plated brass wall brackets. Fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass pop-up waste with china lever handle; nickel-plated brass supply pipes to wall with compression controlling valves, and nickel-plated brass $1\frac{1}{4}"$ basin trap to wall.

DIMENSIONS	
Lavatory slab.....	$24" \times 20"$
Bowl.....	$16" \times 12\frac{1}{2}" \times 6"$
TELEGRAPHIC CODE	
UTBOD UTBIC	
LIST PRICES	
Complete as specified.....	\$45.30
Lavatory only.....	16.00

"A.B.C." SYSTEMS



PLATE 755-A

SPECIFICATIONS—"Impervio" vitreous china "Raleigh" square lavatory; plate 755-A; size $24" \times 20"$, on nickel-plated brass wall brackets. Fitted with nickel-plated brass lowdown compression basin cocks, with china indexes; nickel-plated brass "Cyrene" pop-up waste fixture; nickel-plated brass supply pipes to wall, nickel-plated brass $1\frac{1}{4}"$ basin trap to wall.

DIMENSIONS	
Lavatory slab.....	$24" \times 20"$
Bowl.....	$15\frac{1}{2}" \times 12\frac{1}{2}" \times 6"$
Apron.....	4"
TELEGRAPHIC CODE	
USMUP	
LIST PRICES	
Complete as specified.....	\$41.40
Lavatory only.....	16.00

Continued on next page



PLATE 765-A

SPECIFICATIONS—"Impervio" vitreous china "Bellemeade" lavatory on concealed hangers; plate 765-A; size 20" x 18", with integral back 7" high. Fitted with nickel-plated brass lowdown compression cocks with china indexes; nickel-plated brass "Knickerbocker" pop-up waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory slab	18"x20"
Bowl	13 1/2"x11"x5 1/2"
Integral back	7" high
TELEGRAPHIC CODE	UTSUA

LIST PRICES

Complete as specified	\$31.00
Lavatory with concealed hangers	13.00



PLATE 770-A

SPECIFICATIONS—"Impervio" vitreous china small swell front lavatory; plate 770-A; size 20" x 18", with 6" high integral back; set on concealed wall hangers. Fitted with nickel-plated brass lowdown compression cocks with china indexes; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory	20"x18"
Height of back	6"
Bowl	14"x11"x6"
Apron	4"
TELEGRAPHIC CODE	UTTAS

LIST PRICES

Complete as specified	\$32.50
Lavatory with hangers only	14.50

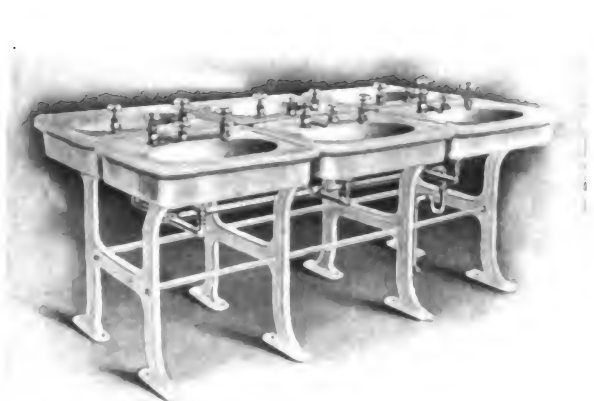


PLATE 756-A

SPECIFICATIONS—Battery of six "Impervio" vitreous china "Kiana" roll-rim lavatories; plate 756-A; size of each lavatory 22" x 20", set upon white painted iron frames. Each lavatory fitted with one pair nickel-plated brass compression cocks with four arm china handles; nickel-plated brass standing waste and overflow with four arm china handle, one pair of nickel-plated brass supply pipes to floor; nickel-plated brass continuous waste pipe with outlet trap to floor.

DIMENSIONS

Each lavatory slab	22"x20"
Bowl	16"x12"x6"
Apron	5"
TELEGRAPHIC CODE	UWPYX

LIST PRICES

Complete as specified	\$254.00
Add for every pair of lavatories added to above battery	80.00
Each lavatory only	16.00

"A.B.C." SYSTEMS



PLATE 775-A

SPECIFICATIONS—"Impervio" vitreous china "Recess" lavatory on concealed hangers; plate 775-A; size 24" x 20", with integral back and sides 4" high. Fitted with nickel-plated brass Fuller basin cocks with china handles; nickel-plated brass "Triumph" pop-up waste with china lever handle; nickel-plated brass supply pipes to wall; nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory	24"x20"
Bowl	15"x12 1/2"x5 1/2"
Apron	5"
TELEGRAPHIC CODE	USNOP

LIST PRICES

Complete as specified	\$58.50
Lavatory with concealed hangers	36.50

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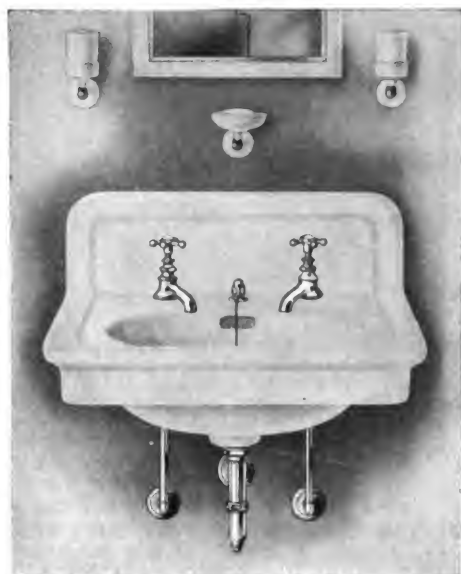


PLATE 783-A

SPECIFICATIONS—"Impervio" vitreous china "Allendale" lavatory on concealed hangers; plate 783-A; size 20" x 18", with integral back 6" high. Fitted with nickel-plated brass low down compression cocks with china indexes; nickel-plated brass chainstay, chain, plug and coupling; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS	
Lavatory.....	20" x 18"
Bowl.....	15" x 11 1/2" x 6"
Integral back.....	6" high
Apron.....	3"
TELEGRAPHIC CODE	USNYS
LIST PRICES	
Complete as specified.....	\$26.90
Lavatory with concealed hangers.....	13.00



PLATE 784-A

SPECIFICATIONS—"Impervio" vitreous china "Empire" square lavatory; plate 784-A; size 20" x 18", with integral back 6" high; on concealed iron brackets. Fitted with nickel-plated brass low down compression cocks with china indexes; nickel-plated brass overflow grid and chain, with plug and coupling; nickel-plated brass supply pipes to wall, and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS	
Lavatory.....	20" x 18"
Bowl.....	15" x 11 1/2" x 6"
Integral back.....	6" high
Apron.....	3"
TELEGRAPHIC CODE	USSER
LIST PRICES	
Complete as specified.....	\$27.35
Lavatory with concealed hangers.....	13.00



PLATE 785-A

SPECIFICATIONS—"Impervio" vitreous china "Madison" lavatory; plate 785-A; size 20" x 18", with integral back 6" high; on concealed iron wall brackets. Battery of three lavatories, each lavatory fitted with nickel-plated brass lowdown compression cocks with china indexes; nickel-plated brass supply pipes to wall; nickel-plated brass overflow grid and chain, with plug and coupling; white painted iron concealed wall brackets, with nickel-plated brass continuous waste and trap for battery of three lavatories.

DIMENSIONS	
Each Lavatory.....	20" x 18"
Integral back.....	6" high
Bowl.....	15" x 11 1/2" x 6"
Apron.....	3"
TELEGRAPHIC CODE : Battery of 3 Lavatories.....	USVIV
Single Lavatory.....	UTZUD
LIST PRICES	
Complete as specified.....	\$84.05
Single lavatory with wall hangers only.....	13.00

"A.B.C." SYSTEMS



PLATE 787-A

SPECIFICATIONS—"Impervio" vitreous china "Savey" lavatory on concealed hangers; plate 787-A; size 26" x 13", with integral back 4" high. Fitted with nickel-plated brass low down compression cocks with china indexes; nickel-plated brass chainstay, chain, plug and coupling; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS	
Lavatory.....	26" x 13"
Bowl.....	16 1/2" x 9 1/2" x 6"
Integral back.....	4" high
TELEGRAPHIC CODE	UTKYP
LIST PRICES	
Complete as specified.....	\$26.90
Lavatory with concealed hangers.....	13.00

Continued on next page



PLATE 802-A

SPECIFICATIONS—"Impervio" vitreous china "Cernor" lavatory, on concealed hangers for corners; plate 802-A; size 20" x 18", with integral back 6" high. Fitted with nickel-plated brass low down compression cocks with china indexes; nickel-plated brass chainstay, chain plug and coupling; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Front to back.....	18"
Width at back.....	20"
Bowl.....	14 1/2" x 11 1/2" x 6"
Integral back.....	6" high
TELEGRAPHIC CODE.....	UTMAL
LIST PRICES	
Complete as specified.....	\$38.65
Lavatory with concealed hangers.....	24.75



PLATE 805-A

SPECIFICATIONS—"Impervio" vitreous china "Belledon" lavatory; plate 805-A; size 24" x 18", with integral back 6" high and integral crockery extension for support. Fitted with nickel-plated brass Fuller cocks with china handles; nickel-plated brass standing overflow and waste with china knob; nickel-plated brass supply pipes to wall, with compression controlling valves, and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory.....	24" x 18"
Bowl.....	14 1/2" x 11 1/2" x 5 1/4"
Integral back.....	6" high
Apron.....	4"
TELEGRAPHIC CODE.....	USPAM
LIST PRICES	
Complete as specified.....	\$44.00
Lavatory with wall bolts.....	22.00



PLATE 810-A

SPECIFICATIONS—"Impervio" vitreous china square lavatory, plate 810-A; size (see below); with integral back 6" high and integral china bracket. Fitted with nickel-plated brass Fuller faucets with china handles; nickel-plated brass chain stay and chain, with plug and coupling; nickel-plated brass 1 1/4" waste trap and nickel-plated brass supply pipes to wall, and necessary screws for fastening lavatory to wall.

DIMENSIONS

Lavatory.....	20" x 18"	24" x 20"
Bowl.....	15" x 11 1/2" x 6"	16" x 12 1/2" x 6"
Integral back.....	6" high	6" high
TELEGRAPHIC CODE.....	UTCOP	UTCEA
LIST PRICES		
Complete as specified.....	\$27.90	\$36.90
Lavatory with wall bolts.....	14.00	23.00

"A.B.C." SYSTEMS



PLATE 811-A

SPECIFICATIONS—"Impervio" vitreous china "Thornton" lavatory; plate 811-A; size 24" x 18", with integral back 8" high and integral crockery bracket. Fitted with nickel-plated brass low down compression cocks with china indexes; nickel-plated brass pop-up waste with china lever handle; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" basin trap to wall.

DIMENSIONS

Lavatory.....	24" x 18"
Bowl.....	15" x 11 1/2" x 5 1/4"
Integral back.....	8" high
Apron.....	4"
TELEGRAPHIC CODE.....	USTIT
LIST PRICES	
Complete as specified.....	\$49.00
Lavatory with wall bolts.....	29.00

Continued on next page



PLATE 812-A

SPECIFICATIONS—"Impervio" vitreous china roll-rim "Hilton" lavatory; plate 812-A; size 24" x 20"; set on china leg. Fitted with nickel-plated brass low down compression cocks with china indexes; nickel-plated brass chainstay, chain, plug and coupling; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS	
Lavatory.....	24" x 20"
Bowl.....	16" x 12 $\frac{1}{2}$ " x 6"
Apron.....	4"
TELEGRAPHIC CODE	UTCAB
LIST PRICES	
Complete as specified.....	\$33.90
Lavatory only.....	16.00
Vitreous china leg only.....	4.00



PLATE 799-A

SPECIFICATIONS—"Impervio" vitreous china flushing rim pedestal lavatory; plate 799-A. Fitted with nickel-plated brass double treadle supply fixture with floor plate, less supply pipes.

NOTE—When supply is turned on water runs into bowl from flushing rim and runs out slowly through the overflow opening in bowl—insuring continuous flushing of bowl while in use.

DIMENSIONS	
Height over all, floor to top.....	30 $\frac{1}{2}$ "
Inside diameter of bowl.....	11 $\frac{1}{2}$ "
Depth of bowl.....	5 $\frac{3}{4}$ "
Diameter of base.....	11 $\frac{1}{2}$ "
TELEGRAPHIC CODE	USWUZ
LIST PRICES	
Complete as specified.....	\$46.25
Pedestal lavatory only.....	25.00

"A.B.C." SYSTEMS



PLATE 809-A

SPECIFICATIONS—"Impervio" vitreous china "Union" lavatory; plate 809-A; size (see below); with integral back 6" high and integral china bracket; set on china leg. Fitted with nickel-plated brass self-closing compression cocks with china indexes; nickel-plated brass chainstay, chain, plug and coupling; nickel-plated brass supply pipes to wall, with compression controlling valves and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

DIMENSIONS		
Lavatory.....	20" x 18"	24" x 20"
Integral back.....	6" high	6" high
Bowl.....	15" x 11 $\frac{1}{4}$ " x 6"	16" x 12 $\frac{1}{2}$ " x 6"
TELEGRAPHIC CODE	UTHUL	UTHYM
LIST PRICES		
Complete as specified.....	\$35.90	\$44.90
Lavatory only.....	14.00	23.00
Vitreous china leg only.....	4.00	4.00



PLATE 850-A

SPECIFICATIONS—"Impervio" vitreous china "Dental" lavatory, with flushing rim bowl; plate 850-A; supported by concealed wall hangers and fitted with nickel-plated brass compression basin cock with four-arm china handle, nickel-plated brass supply pipe to wall, and nickel-plated brass $1\frac{1}{4}$ " basin trap to wall.

NOTE—When supply cock is turned, the bowl is automatically flushed.

DIMENSIONS	
Width across wall.....	12"
Wall to front.....	11"
Bowl.....	7" x 5 $\frac{3}{4}$ " x 4 $\frac{1}{4}$ "
Integral back.....	5" high
TELEGRAPHIC CODE	UTXYD
LIST PRICE	
Complete as specified.....	\$18.50

Continued on next page



PLATE 298-A

SPECIFICATIONS—"Ideal" solid porcelain "Darana" corner drinking fountain, ("A" or "B") quality; plate 298-A; on concealed wall brackets. Fitted with nickel-plated brass self-closing cock; nickel-plated brass outlet strainer and coupling, and nickel-plated brass 1/4" basin trap to wall.

DIMENSIONS	
Length along sides.....	12"
Corner to front of rim.....	14 1/4"
Height over all.....	15"
TELEGRAPHIC CODE	
LIST PRICES	
Complete as specified, "A" quality.....	\$35.90
Complete as specified, "B" quality.....	29.90
Fountain only, "A" quality.....	20.00
Fountain only, "B" quality.....	14.00



PLATE 309-A

SPECIFICATIONS—"Ideal" solid porcelain "Alcovar" double drinking fountain, ("A" or "B") quality; plate 309-A; to tile into wall recess. Fitted with nickel-plated brass china-tipped compression self-closing cocks and nickel-plated brass outlet strainer and coupling.

DIMENSIONS	
Top to bottom, over all.....	20 1/2"
Width along wall.....	34"
Front to back over all.....	13 1/2"
Face of wall to front.....	5 1/2"
Depth of basin.....	3"
TELEGRAPHIC CODE	
LIST PRICES	
Complete as specified, "A" quality.....	\$54.50
Complete as specified, "B" quality.....	42.50
Fountain only, "A" quality.....	40.00
Fountain only, "B" quality.....	28.00

PLATE 311-A

SPECIFICATIONS—"Ideal" Solid Porcelain Drinking Fountain Bowl, ("A" or "B") quality; plate 311-A; set on Bronzed Iron Pedestal. Fitted with nickel-plated brass fountain spout with ring, complete with supply pipe with loose key valve, waste pipe and couplings.

DIMENSIONS	
Bowl, outside diameter.....	13"
Inside diameter.....	10"
Depth inside.....	3 1/4"
Top of spout to floor.....	30 1/2"
TELEGRAPHIC CODE	
LIST PRICES	
Complete as specified, "A" quality.....	\$39.00
Complete as specified, "B" quality.....	36.00
Fountain bowl only, "A" quality.....	10.00
Fountain bowl only, "B" quality.....	7.00



PLATE 311-A

"A.B.C." SYSTEMS



PLATE 299-A

PLATE 299-A	
DIMENSIONS	
Top to bottom over all.....	24"
Width along wall.....	16 1/2"
Front to back over all.....	12"
Face of wall to front.....	4 1/2"
Depth of basin.....	3"
TELEGRAPHIC CODE	
LIST PRICES	
Complete as specified, "A" quality.....	\$28.50
Complete as specified, "B" quality.....	22.50
Fountain only, "A" quality.....	20.00
Fountain only, "B" quality.....	14.00

SPECIFICATIONS—"Ideal" solid porcelain single recess drinking fountain, ("A" or "B") quality; plate 299-A; to tile into wall recess. Fitted with nickel-plated brass china tipped compression self-closing cock and nickel-plated brass outlet strainer and coupling.



PLATE 310-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim "Trofont" drinking fountain, ("A" or "B") quality; plate 310-A. Supported by nickel-plated brass wall brackets and fitted with nickel-plated brass four-part self-closing fountain spouts, complete with 3/8" continuous supply pipe with loose key stop, and outlet strainer with 2" waste trap to wall.

DIMENSIONS	
Length over all.....	54"
Front to back.....	17 1/2"
Depth inside.....	5"
TELEGRAPHIC CODE	
LIST PRICES	
Complete as specified, "A" quality.....	\$120.00
Complete as specified, "B" quality.....	105.00
Fountain only, "A" quality.....	50.00
Fountain only, "B" quality.....	35.00

PLATE 912-A

SPECIFICATIONS—Vitreous China Pedestal Drinking Fountain; Plate 912-A (Trenton Potteries Company). Fitted with nickel-plated brass self-closing fountain spout with ring, complete with brass supply pipe and outlet fittings to the floor, less trap.

DIMENSIONS	
Height, floor to top over all, including fittings.....	29 1/4"
Outside diameter of bowl.....	10"
Inside diameter of bowl.....	7 1/2"
Depth of bowl.....	2 1/2"
Diameter of base.....	12"
TELEGRAPHIC CODE	
LIST PRICES	
Complete as specified.....	\$38.00
Pedestal fountain only.....	22.00



PLATE 912-A

NOTE—Pedestal Drinking Fountain can also be made for supply pipe and nickel-plated brass trap to the wall.
 Add \$5.00 to list if furnished this way.

Continued on next page



PLATE 911-A

SPECIFICATIONS—Vitreous china "Waldo" drinking fountain, with integral china trap, plate 911-A (Trenton Potteries Company). Fitted with nickel-plated brass supply pipe, with loose key valve; complete bubbling cup device with china ring spout; $3\frac{1}{2}$ " flange nickel-plated brass outlet strainer with rough brass outlet flange connection to wall; complete with china capped bolts and brass hangers for fastening fountain to wall.



PLATE 914-A

SPECIFICATIONS—Vitreous china "Waldo Jr." drinking fountain; plate 914-A (Trenton Potteries Company). Fitted with nickel-plated brass supply pipe with loose key valve and china constant stream bubbling cup; $3\frac{1}{4}$ " flanged nickel-plated brass strainer with rough brass flange outlet connection to wall; complete with bolts covered with china caps and brass wall hangers.



PLATE 915-A

SPECIFICATIONS—Vitreous china "New Idea" drinking fountain, with integral china trap; plate 915-A (Trenton Potteries Company). Fitted with nickel-plated brass bubbling cup with china indexed push button; nickel-plated brass supply pipes to wall with loose key valve, $3\frac{1}{2}$ " flanged nickel-plated brass outlet strainer and bolts for fastening fountain to wall.

"A.B.C." SYSTEMS

PLATE 911-A
DIMENSIONS
 Fountain bowl, outside..... $13\frac{1}{4}$ " x $13\frac{1}{2}$ "
 Depth of bowl..... $3\frac{1}{2}$ "
 China ring, diameter..... 6"
TELEGRAPHIC CODE... URVAR
LIST PRICES
 Complete as specified..... \$35.00
 China fountain only..... 16.00

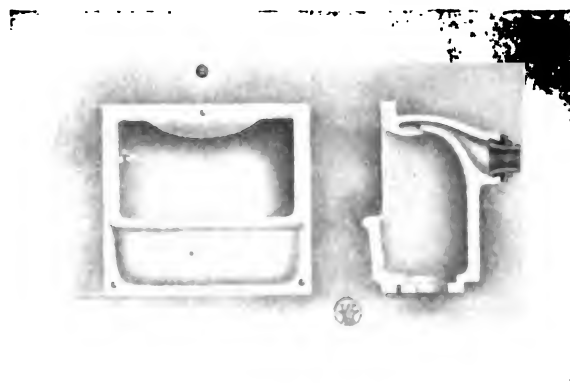


PLATE 920-A

SPECIFICATIONS—Vitreous china flushing rim spitting receptor; plate 920-A (Trenton Potteries Company); to tile into wall. Fitted with nickel-plated brass push button with supply spud and nickel-plated brass outlet strainer.

DIMENSIONS
 Face of Receptor..... $9\frac{1}{2}$ " x 9"
 Depth..... $5\frac{1}{2}$ "
TELEGRAPHIC CODE... UTJOL
LIST PRICES
 Complete as specified..... \$15.00
 Receptor only..... 5.00

PLATE 914-A
DIMENSIONS
 Fountain bowl, outside..... $13\frac{1}{4}$ " x $13\frac{1}{4}$ "
 Depth of bowl..... $3\frac{1}{4}$ "
TELEGRAPHIC CODE... UTKOM
LIST PRICES
 Complete as specified..... \$36.00
 Fountain only..... 16.00

PLATE 916-A
DIMENSIONS
 Fountain bowl, outside..... $13\frac{1}{4}$ " x $13\frac{1}{4}$ "
 Depth of bowl..... $3\frac{1}{4}$ "
TELEGRAPHIC CODE... UTRYA
LIST PRICES
 Complete as specified..... \$31.00
 China Fountain only..... 16.00



PLATE 916-A

SPECIFICATIONS—Vitreous china "New Idea" drinking fountain, with integral china trap; plate 916-A (Trenton Potteries Company). Fitted with bone china bubbling cup with china indexed push button; nickel-plated brass spout for drawing water into cup; nickel-plated brass supply pipes to wall, with loose key valve; $3\frac{1}{2}$ " flanged nickel-plated brass outlet strainer, and bolts for fastening fountain to wall.



PLATE 915 1/2-A
 "New Idea" Bubbling Cup for Drinking Fountains.

The "New Idea" bubbling device for drinking fountains provides necessary regulation of water pressure, and the control of water is absolute. If desired water may be drawn into a cup from the small spout underneath the bubbling cup. The mouth does not at any time come into contact with the fittings. All parts work smoothly and with ease. Children cannot squirt water from this fitting because of a sharp needle point which protrudes when the hand pressure on the bubbling cup is too great.

The "New Idea" bubbling device is readily attached to the fountain and is easy of adjustment to pressure. Every feature is superior—no better device has ever come to our notice—hence we have adopted the "New Idea."

Continued on next page



PLATE 312-A

SPECIFICATIONS—"Ideal" solid porcelain integral back "Dorton" sink, ("A" or "B") quality; plate 312-A; size 61" x 26"; with porcelain drain shelf for rubber mat. Set on porcelain legs and fitted with nickel-plated brass Fuller cocks with china handles, nickel-plated brass standing overflow and waste with plug and coupling; nickel-plated brass waste trap to floor, and rubber drain mat.

DIMENSIONS	
Length of sink.....	5' 1"
Wall to front.....	26"
Height of back.....	9"
TELEGRAPHIC CODE.....	
UNRROR	
LIST PRICES	
Complete as specified, "A" quality.....	\$154.50
Complete as specified, "B" quality.....	116.40
Sink only, "A" quality.....	115.00
Sink only, "B" quality.....	80.50
Porcelain legs, per pair, "A" quality.....	12.00
Porcelain legs, per pair, "B" quality.....	8.40



PLATE 315-A

SPECIFICATIONS—"Ideal" solid porcelain three-quarter roll rim kitchen sink, ("A" or "B") quality; plate 315-A; with porcelain drain board. Set upon porcelain legs and fitted with nickel-plated brass compression cocks and nickel-plated brass outlet strainer and coupling, with nickel-plated brass basin trap to wall.

DIMENSIONS	
Size of sink.....	30" x 20" x 7"
Height of back.....	15"
Size of drain board.....	30" x 20"
TELEGRAPHIC CODE.....	
UNMIJ	
LIST PRICES	
Complete as specified, "A" quality.....	\$58.65
Complete as specified, "B" quality.....	44.55
Sink with wall slab only, "A" quality.....	25.00
Sink with wall slab only, "B" quality.....	17.50
Drain board only, "A" quality.....	10.00
Drain board only, "B" quality.....	7.00
Porcelain legs and supports, per pair, "A" quality.....	12.00
Porcelain legs and supports, per pair, "B" quality.....	8.40



PLATE 317-A

SPECIFICATIONS—"Ideal" solid porcelain "Dennison" double drain board sink, ("A" or "B") quality; plate 317-A; size 40" x 20", with wall slab. Set upon porcelain legs and fitted with nickel-plated brass combination hot and cold supply fitting with china valve handles; nickel-plated brass standing overflow and waste with plug and coupling, and nickel-plated brass outlet trap to floor.

DIMENSIONS	
Length along wall.....	40"
Front to back.....	20"
Height of back.....	12"
Basin.....	14 1/2" x 15" x 6"
Width drain board.....	12 1/2"
Apron.....	4"
TELEGRAPHIC CODE.....	
UNNAH	
LIST PRICES	
Complete as specified, "A" quality.....	\$90.50
Complete as specified, "B" quality.....	71.30
Double drain sink only, "A" quality.....	40.00
Double drain sink only, "B" quality.....	28.00
Wall slab, "A" quality.....	12.00
Wall slab, "B" quality.....	8.40
Porcelain legs and supports, "A" quality.....	12.00
Porcelain legs and supports, "B" quality.....	8.40



PLATE 330-A

SPECIFICATIONS—"Ideal" solid porcelain double drain board pantry sink, ("A" or "B") quality; plate 330-A; size 48" x 22" with wall slab. Set upon nickel-plated brass legs, and fitted with nickel-plated brass faucets; nickel-plated brass pantry sink plug and coupling, and nickel-plated brass outlet trap to wall.

DIMENSIONS	
Length along wall.....	48"
Front to back.....	22"
Width integral drain boards.....	12"
Height wall slab.....	18"
Width sink basin.....	21 1/2"
TELEGRAPHIC CODE.....	
UPKYL	
LIST PRICES	
Complete as specified, "A" quality.....	\$72.80
Complete as specified, "B" quality.....	57.20
Sink only, "A" quality.....	40.00
Sink only, "B" quality.....	28.00
Wall slab only, "A" quality.....	12.00
Wall slab only, "B" quality.....	8.40

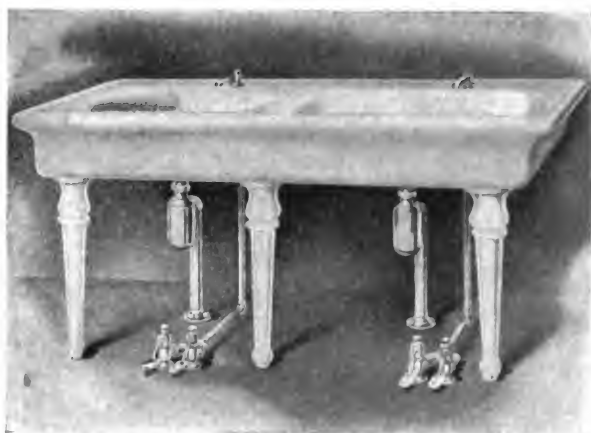


PLATE 316-A

SPECIFICATIONS—"Ideal" solid porcelain combined sink and lavatory, ("A" or "B") quality; plate 316-A; size 59" x 26". Set upon three porcelain legs and fitted with nickel-plated brass pedal valve hot and cold china indexed supply fixtures including faucets; and nickel-plated brass outlet fittings with non-syphoning traps and outlet to floor.

DIMENSIONS	
Length along wall.....	59"
Front to back.....	26"
Bowl.....	20" x 12" x 6"
Sink.....	25" x 12"
Apron.....	7"
TELEGRAPHIC CODE UNMEH	
LIST PRICES	
Complete as specified, "A" quality.....	\$169.40
Complete as specified, "B" quality.....	140.00
Sink and lavatory only, "A" quality.....	80.00
Sink and lavatory only, "B" quality.....	56.00
Three porcelain legs and wall supports, "A" quality.....	18.00
Three porcelain legs and wall supports, "B" quality.....	12.60



PLATE 319-A

SPECIFICATIONS—"Ideal" solid porcelain, extra deep, integral high back sink, ("A" or "B") quality; plate 319-A. Set upon two porcelain legs and fitted with nickel-plated compression cocks; nickel-plated brass strainer and coupling, and nickel-plated brass waste trap to wall.

DIMENSIONS	
Sink.....	36" x 23"
Top to bottom at front.....	12"
Top to bottom at back.....	18"
TELEGRAPHIC CODE UTHOK	
LIST PRICES	
Complete as specified, "A" quality.....	\$68.65
Complete as specified, "B" quality.....	49.55
Sink only, "A" quality.....	45.00
Sink only, "B" quality.....	29.50
Porcelain legs and supports, "A" quality.....	12.00
Porcelain legs and supports, "B" quality.....	8.40

"A.B.C." SYSTEMS



PLATE 321-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim double recess sink, ("A" or "B") quality; 53" long; on plain square porcelain pedestals. Fitted with nickel-plated brass combination hot and cold swinging faucet with china indexes on valve handles, two nickel-plated brass standing waste and overflows, with plugs and couplings, and two nickel-plated brass 1 1/4" basin traps to wall.

DIMENSIONS	
Length of sink over all.....	53"
Front to back over all.....	26"
Front to back—not including recess.....	20"
Large compartment inside.....	31" x 15" x 7"
Small compartment inside.....	16" x 15" x 7"
TELEGRAPHIC CODE UNNEJ	
LIST PRICES	
Complete as specified, "A" quality.....	\$123.00
Complete as specified, "B" quality.....	97.80
Double recess sink only, "A" quality.....	48.00
Double recess sink only, "B" quality.....	33.60
Two porcelain pedestals only, "A" quality.....	36.00
Two porcelain pedestals only, "B" quality.....	25.20



PLATE 320-A

SPECIFICATIONS—"Ideal" solid porcelain integral high back sink with end recess, ("A" or "B") quality; plate 320-A; size 36" x 24". Set on porcelain legs and fitted with nickel-plated brass Fuller cocks; nickel-plated brass standing waste and overflow with china index and nickel-plated brass waste trap to wall.

DIMENSIONS	
Sink.....	36" x 24"
Recess extends out beyond sink.....	5"
Height of back.....	9"
Depth of sink.....	18"
TELEGRAPHIC CODE URTER	
LIST PRICES	
Complete as specified, "A" quality.....	\$71.50
Complete as specified, "B" quality.....	54.40
Recess high back sink, only, "A" quality.....	45.00
Recess high back sink only, "B" quality.....	31.50
Two porcelain legs and wall supports, "A" quality.....	12.00
Two porcelain legs and wall supports, "B" quality.....	8.40

Continued on next page



PLATE 322-A

PLATE 322-A

SPECIFICATIONS—"Ideal" solid porcelain roll-rim recess kitchen sink, ("A" or "B") quality; plate 322-A; size (see below); set upon porcelain legs. Fitted with nickel-plated brass supply pipes from the floor, each pipe fitted with nickel-plated brass compression cock with china index; nickel-plated brass simplex standing waste and overflow with china index and nickel-plated brass outlet trap to floor with vent to wall.

DIMENSIONS				
Sink	30" x 20"	36" x 24"	42" x 24"	48" x 24"
Depth inside	7"	7"	7"	7"
TELEGRAPHIC CODE				
	UNNIK	UNNOL	UNNYN	UNPAJ
LIST PRICES				
Complete as specified, "A" quality	\$65.00	\$70.00	\$77.00	\$85.00
Complete as specified, "B" quality	55.40	58.90	63.80	69.40
Sink only, "A" quality	20.00	25.00	32.00	40.00
Sink only, "B" quality	14.00	17.50	22.40	28.00
Porcelain legs, "A" quality, per pair	12.00	12.00	12.00	12.00
Porcelain legs, "B" quality, per pair	8.40	8.40	8.40	8.40

PLATE 323-A

SPECIFICATIONS—"Ideal" solid porcelain kitchen sink, ("A" or "B") quality; plate 323-A; size (see below), with integral back; set upon porcelain legs. Fitted with nickel-plated brass compression cocks; nickel-plated brass outlet strainer and coupling with trap to wall.

DIMENSIONS				
Sink	24" x 22"	30" x 22"	36" x 24"	42" x 24"
Height of back	9"	9"	9"	9"
Depth inside	7"	7"	7"	7"
TELEGRAPHIC CODE				
	UNDIZ	UPLAG	UPLIH	UPLIJ
LIST PRICES				
Complete as specified, "A" quality	\$48.65	\$53.65	\$58.65	\$68.65
Complete as specified, "B" quality	37.55	41.05	44.55	51.55
Sink only, "A" quality	25.00	30.00	35.00	45.00
Sink only, "B" quality	17.50	21.00	24.50	31.50
Porcelain legs, "A" quality, per pair	12.00	12.00	12.00	12.00
Porcelain legs, "B" quality, per pair	8.40	8.40	8.40	8.40

PLATE 324-A

SPECIFICATIONS—"Ideal" solid porcelain three-quarter roll-rim kitchen sink, ("A" or "B") quality; plate 324-A; size (see below), with wall slab; set upon porcelain legs and fitted with nickel-plated brass compression cocks; nickel-plated brass outlet strainer and coupling with nickel-plated brass trap to wall.

DIMENSIONS				
Sink	24" x 17"	30" x 20"	36" x 23"	
Depth inside	6"	7"	7"	
Height of back	15"	15"	15"	
TELEGRAPHIC CODE				
	UPKOJ	UPKUK	UPLOK	
LIST PRICES				
Complete as specified, "A" quality	\$41.15	\$48.65	\$53.65	
Complete as specified, "B" quality	32.30	37.55	41.05	
Sink and back only, "A" quality	17.50	25.00	30.00	
Sink and back only, "B" quality	12.25	17.50	21.00	
Porcelain legs, "A" quality, per pair	12.00	12.00	12.00	
Porcelain legs, "B" quality, per pair	8.40	8.40	8.40	
DIMENSIONS				
Sink		42" x 24"	48" x 24"	
Depth inside		7"	7"	
Height of back		18"	18"	
TELEGRAPHIC CODE				
		UPLUL	UPLYM	
LIST PRICES				
Complete as specified, "A" quality		\$62.65	\$71.65	
Complete as specified, "B" quality		47.35	53.65	
Sink and back only, "A" quality		39.00	48.00	
Sink and back only, "B" quality		27.30	33.60	
Porcelain legs, "A" quality, per pair		12.00	12.00	
Porcelain legs, "B" quality, per pair		8.40	8.40	

PLATE 324-A



PLATE 325-A

PLATE 325-A

SPECIFICATIONS—"Ideal" solid porcelain roll-rim kitchen sink, ("A" or "B") quality; plate 325-A; size (see below); set upon two porcelain legs. Fitted with nickel-plated brass china index compression cocks with 1" nickel-plated brass air chambers; nickel-plated brass strainer and coupling and nickel-plated brass trap to floor with vent to wall.

DIMENSIONS			
Sink.....	24" x 17"	30" x 20"	36" x 23"
Depth inside.....	6"	7"	7"
TELEGRAPHIC CODE URHEF URGUH URGYJ			
LIST PRICES			
Complete as specified, "A" quality.....	\$43.50	\$49.50	\$53.50
Complete as specified, "B" quality.....	36.30	40.50	43.30
Sink only, "A" quality.....	12.00	18.00	22.00
Sink only, "B" quality.....	8.40	12.60	15.40
Porcelain legs, "A" quality, per pair.....	12.00	12.00	12.00
Porcelain legs, "B" quality, per pair.....	8.40	8.40	8.40

DIMENSIONS			
Sink.....	42" x 24"	48" x 24"	
Depth inside.....	7"	7"	
TELEGRAPHIC CODE URHOH URHAD			
LIST PRICES			
Complete as specified, "A" quality.....	\$60.50	\$67.50	
Complete as specified, "B" quality.....	48.20	53.10	
Sink only, "A" quality.....	29.00	36.00	
Sink only, "B" quality.....	20.30	25.20	
Porcelain legs, "A" quality, per pair.....	12.00	12.00	
Porcelain legs, "B" quality, per pair.....	8.40	8.40	



PLATE 332-A

PLATE 332-A

SPECIFICATIONS—"Ideal" solid porcelain flat-rim pantry sink, ("A" or "B") quality; plate 332-A; with end recess; size (see below).

NOTE—Sink is glazed white inside only. Sink is made for standing overflow and waste in the recess.

DIMENSIONS			
Length, not including recess.....	24"	28"	30"
Width outside.....	17"	17"	20"
Depth inside.....	6"	6"	7"
TELEGRAPHIC CODE UPVYA UPWAR UPWBS			
LIST PRICES			
Sink only, "A" quality.....	\$10.00	\$12.00	\$14.00
Sink only, "B" quality.....	7.00	8.40	9.80



PLATE 333-A

PLATE 333-A

SPECIFICATIONS—"Ideal" solid porcelain flat-rim pantry sink, ("A" or "B") quality; plate 333-A; size (see below).

NOTE—Flat-rim pantry sinks are glazed white inside only and can be furnished either with overflow or without. Specify which is desired.

DIMENSIONS			
Sink.....	20" x 14"	23" x 16"	24" x 17"
Depth inside.....	5"	6"	6"
TELEGRAPHIC CODE UPROP UPVER UPVIS			
LIST PRICES			
Sink only, "A" quality.....	\$6.00	\$8.00	\$9.00
Sink only, "B" quality.....	4.20	5.60	6.30
DIMENSIONS			
Sink.....	28" x 17"	30" x 20"	
Depth inside.....	6"	7"	
TELEGRAPHIC CODE UPVOT UPVUV			
LIST PRICES			
Sink only, "A" quality.....	\$11.00	\$13.00	
Sink only, "B" quality.....	7.70	9.10	



PLATE 334-A

PLATE 334-A

SPECIFICATIONS—"Ideal" solid porcelain extra deep flat-rim pantry sink, ("A" or "B") quality; plate 334-A; size (see below).

Same style as plate 333-A, but of greater depth.

DIMENSIONS			
Sink.....	28" x 18"	30" x 20"	
Depth inside.....	10"	10"	
TELEGRAPHIC CODE UPXUX UPZAT			
LIST PRICES			
Sink only, "A" quality.....	\$13.00	\$16.00	
Sink only, "B" quality.....	9.10	11.20	



PLATE 331-A

SPECIFICATIONS—"Ideal" solid porcelain integral high-back kitchen sink, ("A" or "B") quality; plate 331-A; size 61" x 26"; with porcelain extension for draining mat. Set upon two porcelain legs and fitted with nickel-plated brass Fuller kitchen sink faucets with china handles; nickel-plated brass simplex standing waste and overflow with plug and coupling; waste trap to floor, and rubber drain mat to cover porcelain extension.

DIMENSIONS

Length over all.....	5' 1"
Height of back.....	9"
Distance from wall to front.....	26"

TELEGRAPHIC CODE

USLOM

LIST PRICES

Complete as specified, "A" quality.....	\$144.50
Complete as specified, "B" quality.....	109.40
High back sink, no fittings, "A" quality.....	105.00
High back sink, no fittings, "B" quality.....	73.50
Porcelain legs and supports, per pair, "A" quality.....	12.00
Porcelain legs and supports, per pair, "B" quality.....	8.40



PLATE 340-A

SPECIFICATIONS—"Ideal" solid porcelain integral back Vegetable Sink, ("A" or "B") quality; plate 340-A; size 41" x 24"; with end recess and drain ledge. Set upon two porcelain legs and fitted with nickel-plated brass standing waste and overflow with china index; nickel-plated brass compression cocks with china indexes and nickel-plated brass waste trap to wall.

DIMENSIONS

Size over all.....	41" x 24"
Sink compartment outside.....	20 1/2" x 18 1/2"

TELEGRAPHIC CODE

UTSES

LIST PRICES

Complete as specified, "A" quality.....	\$83.00
Complete as specified, "B" quality.....	62.90
Sink only, "A" quality.....	55.00
Sink only, "B" quality.....	38.50
Porcelain legs and supports, per pair, "A" quality.....	12.00
Porcelain legs and supports, per pair, "B" quality.....	8.40



PLATE 376-A

Combination roll rim Laundry tub and integral back Kitchen sink, on porcelain legs.

NOTE—Kitchen Sink may be any size (see plate 323-A). The advantage of this wash tray is the porcelain shelf or ledge for attaching drain board without fastening to wall.

SPECIFICATIONS—(Laundry tub only, complete) "Ideal" solid porcelain laundry tub, ("A" or "B") quality; size 29" x 24"; with porcelain ledge. Set on porcelain legs, as shown in plate 376-A. Fitted with ash drain board with special nickel-plated brass hinges to fasten through tray, complete with rubber bumpers. Nickel-plated brass Fuller laundry tub cocks, nickel-plated brass waste trap to wall with plug and coupling. (Made for either right or left hand). Specify which is desired.

TELEGRAPHIC CODE

UTDUH

LIST PRICES

Laundry tub, complete as specified, "A" quality.....	\$65.30
Laundry tub, complete as specified, "B" quality.....	55.10

"A.B.C." SYSTEMS



PLATE 381-A

SPECIFICATIONS—"Ideal" solid porcelain combination kitchen sink and laundry tub, ("A" or "B") quality; with integral back; plate 381-A. Set on bronzed iron legs and fitted with nickel-plated brass compression sink cocks; nickel-plated brass compression tub cocks; nickel-plated brass sink strainer with coupling, nickel-plated brass tub outlet plug and coupling, and nickel-plated brass waste traps to wall for sink and tub.

DIMENSIONS

Sink outside.....	26" x 23"
Tub outside.....	26" x 23" x 15"
Integral back.....	6" high

TELEGRAPHIC CODE

UTKUN

LIST PRICES

Complete as specified, "A" quality.....	\$88.35
Complete as specified, "B" quality.....	68.35
Combination sink and tub only, "A" quality.....	60.00
Combination sink and tub only, "B" quality.....	40.00

Continued on next page



PLATE 354-A

PLATE 354-A

DIMENSIONS	
Sink.....	23" x 19"
Depth inside.....	6 1/4"

SPECIFICATIONS—"Ideal" solid porcelain special clinic flushing rim slop sink, ("A" or "B") quality; plate 354-A. Set on porcelain pedestal trap standard. Fitted with nickel-plated brass supply pipes with air chambers, nickel-plated brass combination hot and cold supply fitting with china indexed compression valve handles; nickel-plated brass pail hook on spout; nickel-plated brass china indexed pedal valve supply for pan wash, nickel-plated brass 1 1/2" expansion coupling for supply and nickel-plated brass bolts and washers for fastening sink to pedestal.

TELEGRAPHIC CODE.....	URVES
LIST PRICES	
Complete as specified, "A" quality.....	\$100.55
Complete as specified, "B" quality.....	84.95
Sink only, "A" quality.....	40.00
Sink only, "B" quality.....	28.00
Porcelain pedestal trap, "A" quality.....	12.00
Porcelain pedestal trap, "B" quality.....	8.40



PLATE 403-A

PLATE 403-A

DIMENSIONS	
Table.....	30" x 19"
Diameter round basin.....	8"
Depth.....	4"
Floor to top.....	29"

SPECIFICATIONS—"Ideal" solid porcelain manicure table, ("A" or "B") quality; plate 403-A. Set on nickel-plated brass legs, with towel bar and fitted with nickel-plated brass combination supply and waste fixture, with nickel-plated brass soap cup, four arm china tipped compression handles on valves and china knob on waste; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

TELEGRAPHIC CODE.....	URTAP
LIST PRICES	
Complete as specified, "A" quality.....	\$78.00
Complete as specified, "B" quality.....	70.50
Manicure table only, "A" quality.....	25.00
Manicure table only, "B" quality.....	17.50



PLATE 351-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim slop sink, ("A" or "B") quality; plate 351-A; size (see below). Set on iron enameled inside only, pedestal trap standard. Sink fitted with nickel-plated brass faucets and nickel-plated brass pail guard, as shown, complete.

DIMENSIONS			
Sink.....	20" x 16"	22" x 18"	24" x 20"
Depth inside.....	12"	12"	12"
TELEGRAPHIC CODE.....	URGIF	URGAC	URGOG
LIST PRICES			
Complete as specified, "A" quality.....	\$43.50	\$47.50	\$51.50
Complete as specified, "B" quality.....	39.30	42.10	44.90
Sink only, "A" quality.....	14.00	18.00	22.00
Sink only, "B" quality.....	9.80	12.60	15.40

"A.B.C." SYSTEMS



PLATE 353-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim slop sink, ("A" or "B") quality; plate 353-A; size (see below). Set on porcelain pedestal trap standard. Sink fitted with nickel-plated brass supply pipes, with air chambers, and combination hot and cold supply fixture, with china indexed compression valve handles, and with nickel-plated brass slop sink strainer and locker.

DIMENSIONS			
Sink.....	20" x 16"	22" x 18"	24" x 20"
Depth inside.....	12"	12"	12"
TELEGRAPHIC CODE.....	UNRAK	URGED	URFYU
LIST PRICES			
Complete as specified, "A" quality.....	\$48.50	\$52.50	\$56.50
Complete as specified, "B" quality.....	41.30	44.10	46.90
Slop sink only, "A" quality.....	14.00	18.00	22.00
Slop sink only, "B" quality.....	9.80	12.60	15.40
Porcelain pedestal trap, "A" quality.....	10.00	10.00	10.00
Porcelain pedestal trap, "B" quality.....	7.00	7.00	7.00

Continued on next page



PLATE 355-A

SPECIFICATIONS—"Ideal" solid porcelain slop sink, ("A" or "B") quality; plate 355-A; size 24" x 20". Sink glazed white inside and out, set upon nickel-plated brass trap standard, with strainer and locker and with clean-out plug and large vent to wall. Sink fitted with nickel-plated brass flushing rim; with hot and cold supply pipes, with air chambers and nickel-plated brass combination hot and cold spout supply, and with combination hot and cold supplies to the brass flushing rim.

DIMENSIONS

Sink.....	24" x 20"
Depth inside.....	12"

TELEGRAPHIC CODE

URWYZ

LIST PRICES

Complete as specified, "A" quality.....	\$125.00
Complete as specified, "B" quality.....	118.40
Sink only, "A" quality.....	22.00
Sink only, "B" quality.....	15.40



PLATE 357-A

SPECIFICATIONS—"Ideal" solid porcelain integral high-back slop sink, ("A" or "B") quality; plate 357-A; size (see below); on porcelain pedestal trap. Fitted with nickel-plated brass compression faucets and nickel-plated brass slop sink strainer and locker.

DIMENSIONS

Sink.....	20" x 16"	22" x 18"	24" x 20"
Height of back.....	12"	12"	12"
Depth inside.....	12"	12"	12"

TELEGRAPHIC CODE

UNFOC UNFUD UNPYF

LIST PRICES

Complete as specified, "A" quality.....	\$38.15	\$43.15	\$48.15
Complete as specified, "B" quality.....	28.85	32.35	35.85
Sink only, "A" quality.....	21.00	26.00	31.00
Sink only, "B" quality.....	14.70	18.20	21.70
Porcelain pedestal trap only, "A" quality.....	10.00	10.00	10.00
Porcelain pedestal trap only, "B" quality.....	7.00	7.00	7.00



PLATE 362-A

SPECIFICATIONS—"Ideal" solid porcelain clinic flushing rim slop sink, ("A" or "B") quality; plate 362-A; size 23" x 18"; set upon porcelain pedestal trap. Fitted with nickel-plated brass 1½" expansion coupling; one set nickel-plated brass bolts and washers and with nickel-plated brass combination hot and cold china indexed pedestal valve supply to pan wash.

DIMENSIONS

Sink outside.....	23" x 18"
Depth inside.....	9"

TELEGRAPHIC CODE

URWUX

LIST PRICES

Complete as specified, "A" quality.....	\$79.05
Complete as specified, "B" quality.....	63.45
Sink only, no fittings, "A" quality.....	40.00
Sink only, no fittings, "B" quality.....	28.00
Pedestal trap only, "A" quality.....	12.00
Pedestal trap only, "B" quality.....	8.40



PLATE 360-A

SPECIFICATIONS—"Ideal" solid porcelain flushing rim slop sink, ("A" or "B") quality; plate 360-A; size (see below); set upon porcelain pedestal vented trap. Fitted with nickel-plated brass 1½" sanitary expansion coupling; strainer and lock nut and 2" expansion vent coupling.

DIMENSIONS

Sink outside.....	22" x 18"	22" x 22"	24" x 20"
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TELEGRAPHIC CODE

URVOV UPNAJ URVUA

LIST PRICES

Complete as specified, "A" quality.....	\$36.92	\$39.92	\$44.92
Complete as specified, "B" quality.....	27.32	29.42	32.92
Sink only, "A" quality.....	22.00	25.00	30.00
Sink only, "B" quality.....	15.40	17.50	21.00
Porcelain pedestal trap, vented, "A" quality.....	10.00	10.00	10.00
Porcelain pedestal trap, vented, "B" quality.....	7.00	7.00	7.00



PLATE 378-A

PLATE 378-A

SPECIFICATIONS—"Ideal" solid porcelain two part set laundry tubs, ("A" or "B") quality; plate 378-A; size (see below); with integral high backs; set upon porcelain legs. Tubs and legs glazed pure white and fitted with nickel-plated brass compression faucets; nickel-plated brass outlet plugs and couplings with continuous waste vented to wall and with outlet trap to floor.

DIMENSIONS		
Each tub outside.....	26" x 26"	29" x 26"
Depth tub inside.....	17"	17"

TELEGRAPHIC CODE.....	UPXYZ	UPXOW
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LIST PRICES		
Complete as specified, "A" quality.....	\$106.50	\$114.50
Complete as specified, "B" quality.....	81.90	87.50
Each tub only, "A" quality.....	32.00	36.00
Each tub only, "B" quality.....	22.40	25.20
Tub legs with wall straps, "A" quality, per pair.....	9.00	9.00
Tub legs with wall straps, "B" quality, per pair.....	6.30	6.30

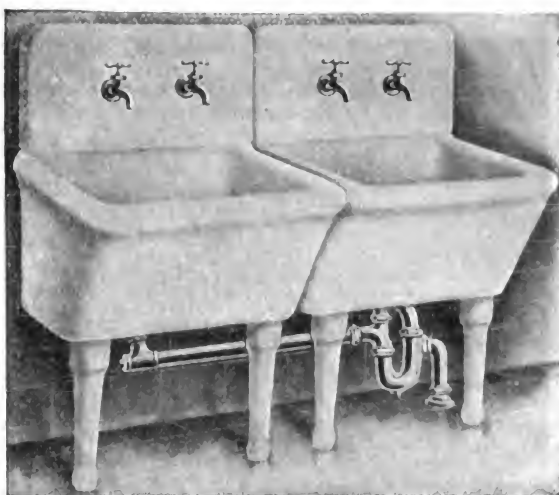


PLATE 375-A

PLATE 375-A

SPECIFICATIONS—"Ideal" solid porcelain two part set laundry tubs, ("A" or "B") quality; plate 375-A; size (see below); with wall slabs and set upon porcelain legs. Tubs, wall slabs and legs glazed white; fitted with nickel-plated brass compression faucets; nickel-plated brass outlet plugs with couplings and with nickel-plated brass continuous waste with vent to wall and outlet to floor.

DIMENSIONS			
Each tub outside.....	24" x 24"	26" x 24"	29" x 24"
Depth inside.....	17"	17"	17"
Height of back.....	15"	15"	15"

TELEGRAPHIC CODE.....	UPZOX	UPCAW	UPKIH
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LIST PRICES			
Complete as specified, "A" quality.....	\$91.90	\$94.90	\$97.90
Complete as specified, "B" quality.....	71.80	73.90	76.00
Each tub and back only, "A" quality.....	24.50	26.00	27.50
Each tub and back only, "B" quality.....	17.15	18.20	19.25
Porcelain legs and supports, per pair, "A" quality....	9.00	9.00	9.00
Porcelain legs and supports, per pair, "B" quality....	6.30	6.30	6.30

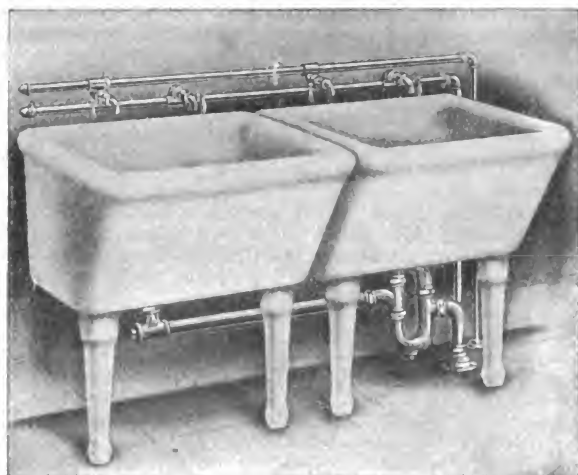


PLATE 377-A

PLATE 377-A

SPECIFICATIONS—"Ideal" solid porcelain two part set roll rim laundry tubs, ("A" or "B") quality; plate 377-A; size (see below); set upon porcelain legs. Tubs and legs glazed pure white and fitted with set nickel-plated brass hot and cold supply pipes from the floor with nickel-plated brass Fuller faucets and nickel-plated brass outlet plugs and couplings and with continuous waste with outlet to floor and vent to wall.

DIMENSIONS			
Each tub outside.....	24" x 24"	26" x 24"	29" x 24"
Depth inside	17"	17"	17"

TELEGRAPHIC CODE.....	USLUN	USGOH	USHOJ
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LIST PRICES			
Complete as specified, "A" quality.....	\$92.50	\$94.50	\$96.50
Complete as specified, "B" quality.....	75.70	77.10	78.50
Each tub only, "A" quality.....	19.00	20.00	21.00
Each tub only, "B" quality.....	13.30	14.00	14.70
Legs with wall straps, "A" quality, per pair.....	9.00	9.00	9.00
Legs with wall straps, "B" quality, per pair.....	6.30	6.30	6.30

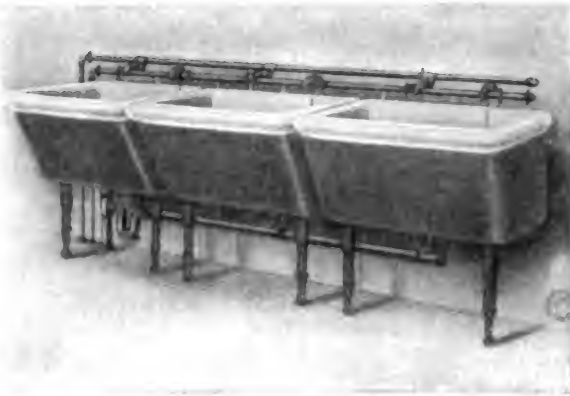


PLATE 371-A

SPECIFICATIONS—"Ideal" solid porcelain roll rim three part set laundry tubs; plate 371-A; size (see below); set upon bronzed iron legs. Tubs glazed white inside and over roll rim and buff glaze outside and fitted with nickel-plated brass hot and cold supply pipes from the floor, with nickel-plated brass Fuller faucets and nickel-plated brass outlet plugs and couplings and with continuous waste with outlet to floor and vent to wall.

NOTE—Illustration shows clearly where buff glaze joins white glaze.

DIMENSIONS			
Each tub outside.....	24" x 24"	26" x 24"	29" x 24"
Depth inside.....	17"	17"	17"
TELEGRAPHIC CODE.....			
	UTWUB	UTWYC	UTXAW
LIST PRICES			
Complete as specified.....	\$86.00	\$87.50	\$89.00
Each tub only.....	11.50	12.00	12.50

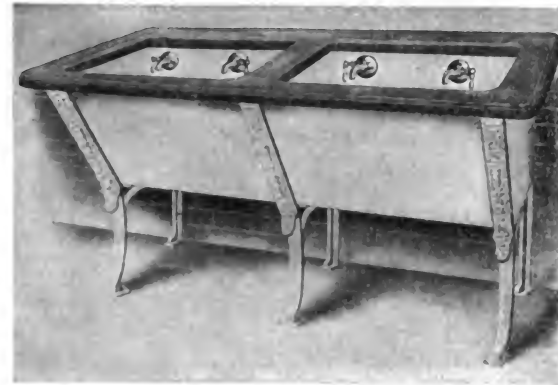


PLATE 379-A

SPECIFICATIONS—"Ideal" solid porcelain two part set flat rim laundry tubs, ("A" or "B") quality; plate 379-A; size (see below). Tubs glazed white inside only and fitted with nickel-plated brass Fuller faucets; galvanized iron legs and frames, complete with ash frame and covers and nickel-plated brass plugs and couplings with outlet traps to the wall.

DIMENSIONS			
Each tub outside.....	24" x 24"	27" x 24"	29" x 24"
Inside depth.....	17"	17"	17"
TELEGRAPHIC CODE.....			
	UPSOR	UPTAN	USDOP
LIST PRICES			
Complete as specified, "A" quality.....	\$62.10	\$64.10	\$66.10
Complete as specified, "B" quality.....	53.70	55.10	56.50
Each tub only, "A" quality.....	14.00	15.00	16.00
Each tub only, "B" quality.....	9.80	10.50	11.20



PLATE 400-A

SPECIFICATIONS—"Ideal" solid porcelain drinking trough, ("A" or "B") quality; plate 400-A; size 42" x 26"; set on porcelain pedestals and fitted with nickel-plated brass hot and cold supply pipes from the floor with 1" air chambers, each pipe fitted with nickel-plated brass china indexed compression faucet and trough fitted with nickel-plated brass outlet plug and coupling and nickel-plated brass waste trap to the wall.

DIMENSIONS	
Length.....	42"
Width.....	26"
Inside depth.....	17"
Height over all—floor to top.....	30"
TELEGRAPHIC CODE.....	
	USLAJ
LIST PRICES	
Complete as specified, "A" quality.....	\$90.30
Complete as specified, "B" quality.....	70.80
Trough and pedestals only, "A" quality.....	65.00
Trough and pedestals only, "B" quality.....	45.50

"A.B.C." SYSTEMS



PLATE 404-A

SPECIFICATIONS—"Ideal" solid porcelain baby shampoo table, ("A" or "B") quality; plate 404-A; set on porcelain pedestal. Fitted with nickel-plated brass shampoo fixture with china tipped compression valves; nickel-plated brass supply pipes through pedestal into floor; compression controlling valves on supply pipes; rubber hose and nickel-plated brass spray and nickel-plated brass strainer and coupling to connect with trap (not specified) inside pedestal.

DIMENSIONS	
Table.....	42" x 24"
Floor to top of table.....	31"
TELEGRAPHIC CODE.....	
	URNIM
LIST PRICES	
Complete as specified, "A" quality.....	\$118.00
Complete as specified, "B" quality.....	91.00
Table and pedestal only, "A" quality.....	90.00
Table and pedestal only, "B" quality.....	63.00

Continued on next page



PLATE 405-A

PLATE 405-A

SPECIFICATIONS—"Ideal" solid porcelain oval-top dressing table, ("A" or "B") quality; plate 405-A; on porcelain pedestal. Fitted with concealed iron connecting rod, complete with bolts and washers.

DIMENSIONS	
Table top.....	26" x 16"
Height from floor to top.....	30 1/2"
TELEGRAPHIC CODE	
USKOL	
LIST PRICES	
Complete as specified, "A" quality.....	\$25.00
Complete as specified, "B" quality.....	17.50
Table top only, "A" quality.....	10.00
Table top only, "B" quality.....	7.00
Pedestal with rod, "A" quality.....	15.00
Pedestal with rod, "B" quality.....	10.50



PLATE 408-A

SPECIFICATIONS—"Ideal" solid porcelain square-top footstool, ("A" or "B") quality; plate 408-A. Each leg fitted with rubber bumper.

DIMENSIONS	
Top.....	19 1/2" x 12 1/4"
Height from floor to top over all.....	11"
TELEGRAPHIC CODE	
USPYJ	
LIST PRICES	
Complete as specified, "A" quality.....	\$15.00
Complete as specified, "B" quality.....	10.50



PLATE 410-A

SPECIFICATIONS—"Ideal" solid porcelain oval-top footstool, ("A" or "B") quality; plate 410-A. Each leg fitted with rubber bumper.

DIMENSIONS	
Top.....	22 1/4" x 14 1/2"
Height from floor to top over all.....	11"
TELEGRAPHIC CODE	
USDYU	
LIST PRICES	
Complete as specified, "A" quality.....	\$15.00
Complete as specified, "B" quality.....	10.50

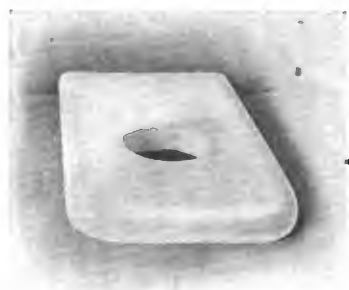


PLATE 415-A

SPECIFICATIONS—"Ideal" solid porcelain floor slab for closet, ("A" or "B") quality; size 21" x 12".

TELEGRAPHIC CODE	
URSUT	
LIST PRICES	
Floor slab, "A" quality.....	\$4.00
Floor slab, "B" quality.....	2.80

"A.B.C." SYSTEMS



PLATE 416-A

SPECIFICATIONS—"Ideal" solid porcelain floor slab for closet, ("A" or "B") quality; size 27" x 12".

TELEGRAPHIC CODE	
URTIS	
LIST PRICES	
Floor slab, "A" quality.....	\$4.50
Floor slab, "B" quality.....	3.15

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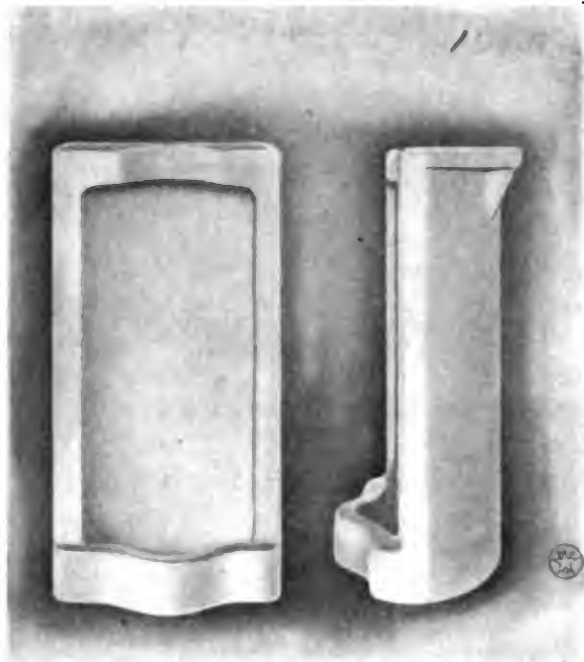


PLATE 500-A

SPECIFICATIONS—"Ideal" solid porcelain stall urinal, ("A" or "B") quality; plate 500-A; size (see below) (for installation in tiled floor and to be installed between slate or marble partitions only). To be fitted with nickel-plated brass curved flush rim spreader, with nickel-plated brass slip joint; nickel-plated brass flush pipe and lock nut for connecting to flushing tank, and nickel-plated brass outlet strainer with floor flange.

DIMENSIONS

Top to bottom over all.....	48"	48"
Floor line to top of urinal.....	42 1/4"	42 1/4"
Width over all.....	24"	28"
Wall to front point of base.....	19"	19"
Wall to front point of top.....	12"	12"

TELEGRAPHIC CODE..... URLOL UNHID

LIST PRICES

Complete as specified, "A" quality.....	\$64.00	\$74.00
Complete as specified, "B" quality.....	49.00	56.00
Urinal only, "A" quality.....	50.00	60.00
Urinal only, "B" quality.....	35.00	42.00

NOTE—If vitreous china outlet strainer is desired, add \$1.00 to above list prices.

PLATE 510-A



PLATE 510-A

SPECIFICATIONS—"Ideal" solid porcelain urinal stall, ("A" or "B") quality; plate 510-A; with integral porcelain shields. Glazed white and fitted with nickel-plated brass flushing valve with china lever handle; nickel-plated brass spreader with lock nut, and nickel-plated brass outlet strainer with floor flange.

DIMENSIONS

Floor to top over all.....	3' 7"
Width over all.....	24"

TELEGRAPHIC CODE..... URZEW

LIST PRICES

Complete as specified, "A" quality.....	\$83.00
Complete as specified, "B" quality.....	65.00
Urinal stall only, "A" quality.....	60.00
Urinal stall only, "B" quality.....	42.00

NOTE—If vitreous china outlet strainer is desired, add \$1.00 to above list prices.

"A.B.C." SYSTEMS

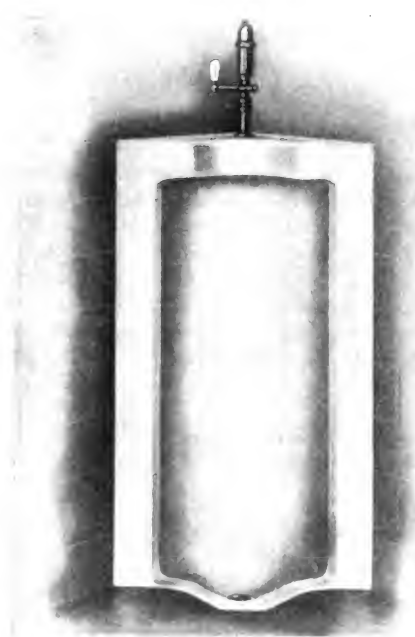


PLATE 512-A

SPECIFICATIONS—"Ideal" solid porcelain corner stall urinal, ("A" or "B") quality; plate 512-A. Glazed white and fitted with nickel-plated brass flushing valve with china lever handle; nickel-plated brass spreader with lock nut and nickel-plated brass outlet strainer with floor flange.

DIMENSIONS

Floor to top over all.....	3' 6"
Distance from corner along sides.....	16 1/4"
Width across front, over all.....	23"
Distance corner to front, over all.....	18"

TELEGRAPHIC CODE..... URRUS

LIST PRICES

Complete as specified, "A" quality.....	\$93.00
Complete as specified, "B" quality.....	72.00
Urinal only, "A" quality.....	70.00
Urinal only, "B" quality.....	49.00

NOTE—If vitreous china outlet strainer is desired, add \$1.00 to above list prices.

Continued on next page



PLATE 503-A

SPECIFICATIONS—"Ideal" solid porcelain stall urinals, ("A" or "B") quality; plate 503-A; with low tops and vitreous china flushing tank. Battery to consist of (number) stalls, with side slabs, floor slabs, top pieces, front columns and seam covers, all glazed white. Stalls fitted with nickel-plated brass curved, flush rim spreaders, with flush connections and nickel-plated brass "T" connection, with flush pipes to tank; nickel-plated brass outlet strainers and floor flanges; vitreous china flushing tank, fitted with "Watrous" automatic flushing fittings.

NOTE—Illustration shows battery of two stalls. Battery may consist of any number of stalls desired. Specify clearly exact number required.

DIMENSIONS

Floor to top of stalls over all.....	41 1/4"
Width over all, 2 stall battery.....	5'
Width over all, 3 stall battery.....	7'

LIST PRICES

Battery of two stall urinals (as shown), complete as specified, "A" quality.....	\$195.00
Battery of two stall urinals (as shown), complete as specified, "B" quality.....	153.00
Battery of three stall urinals, complete as specified, "A" quality.....	272.00
Battery of three stall urinals, complete as specified, "B" quality.....	210.50
Single stall, with slabs, columns and top pieces only, no fittings, "A" quality.....	75.00
Single stall, with slabs, columns and top pieces only, no fittings, "B" quality.....	52.50
Two stall urinals, with slabs, columns, top pieces only, no fittings, "A" quality.....	140.00
Two stall urinals, with slabs, columns, top pieces only, no fittings, "B" quality.....	98.00
Each additional stall with slabs, columns, and top pieces only, no fittings, "A" quality.....	65.00
Each additional stall with slabs, columns, and top pieces only, no fittings, "B" quality.....	45.50

NOTE—Add for vitreous china outlet strainer \$1.00 for each stall.

"A.B.C." SYSTEMS

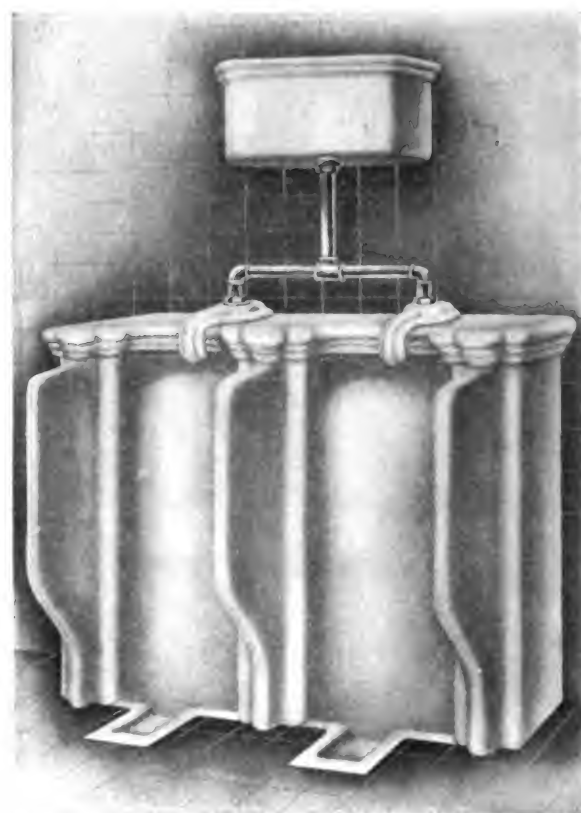


PLATE 505-A

SPECIFICATIONS—"Ideal" solid porcelain stall urinals, ("A" or "B") quality; plate 505-A; with low tops and extended shields and with vitreous china flushing tank. Battery to consist of (number) stalls, with side slabs, floor slabs, extended front columns, top pieces and seam covers, all glazed white. Stalls fitted with nickel-plated brass curved flush rim spreaders with flush connections and nickel-plated brass "T" connection, with flush pipes to tank; nickel-plated brass outlet strainers and floor flanges; vitreous china flushing tank, fitted with "Watrous" automatic flushing fixture.

NOTE—Illustration shows battery of two stalls. Battery may consist of any number of stalls desired. Specify clearly exact number required.

DIMENSIONS

Floor to top of stalls, over all.....	41 1/4"
Width over all, 2 stall battery.....	5'
Width over all, 3 stall battery.....	7'

LIST PRICES

Battery of two stall urinals as shown, complete as specified, "A" quality.....	\$207.00
Battery of two stall urinals as shown, complete as specified, "B" quality.....	161.40
Battery of three stall urinals, complete as specified, "A" quality.....	288.00
Battery of three stall urinals, complete as specified, "B" quality.....	221.70
Single stall with slabs, shields and top pieces only, no fittings, "A" quality.....	83.00
Single stall with slabs, shields and top pieces only, no fittings, "B" quality.....	58.10
Two stall urinals, with slabs, shields and top pieces only, "A" quality.....	152.00
Two stall urinals, with slabs, shields and top pieces only, "B" quality.....	106.40
Each additional stall with slabs, shields, and top pieces, only, no fittings, "A" quality.....	69.00
Each additional stall with slabs, shields, and top pieces, only, no fittings, "B" quality.....	48.30

NOTE—If vitreous china outlet strainers are desired, add \$1.00 for each stall.

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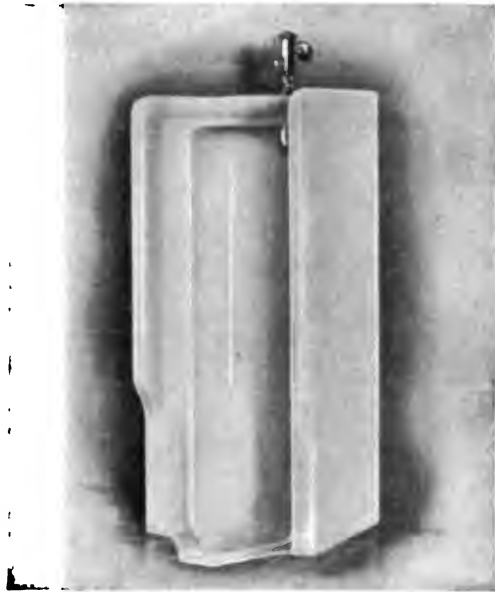


PLATE 513-A

PLATE 513-A

SPECIFICATIONS—"Ideal" solid porcelain stall urinal, ("A" or "B") quality; plate 513-A; 18" wide, with integral extended porcelain shields. Stall fitted with nickel-plated brass chain indexed push button flushing valve; nickel-plated brass fan spray and nickel-plated brass outlet strainer with floor flange.

NOTE—Stall urinal is glazed all over and can be used singly as shown or can be set in batteries if desired. Because of its narrow width it is extensively used in cafés and other places where space is limited but sanitary requirements necessitate the installation of absolutely cleanly fixtures.

DIMENSIONS

Floor to top, over all.....	42"
Width along wall.....	18"
Wall to front, over all.....	20"

TELEGRAPHIC CODE..... URRYT

LIST PRICES

Single stall, complete as specified, "A" quality.....	\$68.00
Single stall, complete as specified, "B" quality.....	54.50
Single stall only, no fittings, "A" quality.....	45.00
Single stall only, no fittings, "B" quality.....	31.50

NOTE—If vitreous china outlet strainer is desired, add \$1.00 to above lists.

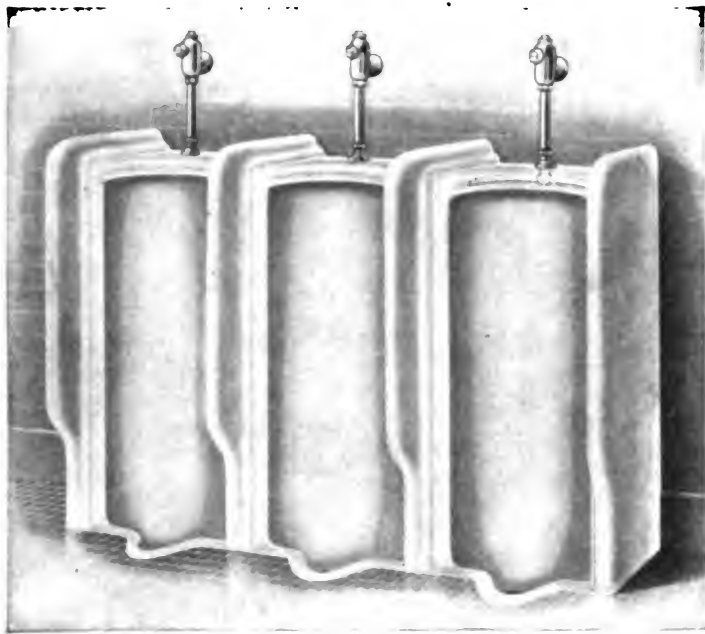


PLATE 515-A

PLATE 515-A

SPECIFICATIONS—"Ideal" solid porcelain stall urinals, "Hinsdale" pattern, plate 515-A; ("A" or "B") quality. Battery to consist of (number) stalls, with top and floor slab made integral with stall, and with center and end shield pieces, all glazed white. Each stall fitted with nickel-plated brass china indexed push button flushing valve and with nickel-plated brass flushing spreader and lock nut and nickel-plated brass outlet strainer with floor flange.

NOTE—The "Hinsdale" pattern stall urinals are so constructed that urine cannot possibly come into contact with any other than the glazed surface, and for this reason will meet superior sanitary requirements. Battery may consist of any number of stalls desired. Illustration shows a battery of three stalls. Specify clearly exact number required.

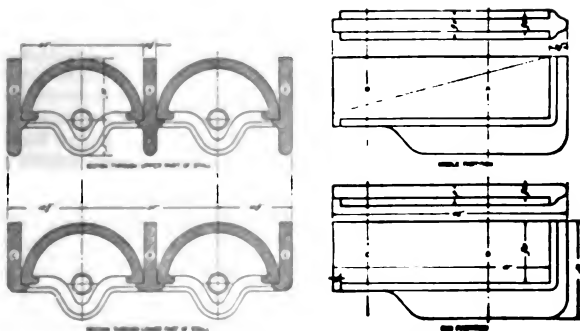
DIMENSIONS

Floor to top of stalls.....	41"
Width over all, single stall.....	29"
Width over all, 2 stall battery.....	4' 8"
Width over all, 3 stall battery.....	6' 11"

LIST PRICES

Single stall urinal, complete as specified, "A" quality.....	\$117.00
Single stall urinal, complete as specified, "B" quality.....	90.00
Battery of 2 stall urinals, complete as specified, "A" quality.....	222.00
Battery of 2 stall urinals, complete as specified, "B" quality.....	171.00
Battery of three stall urinals, complete as specified, "A" quality.....	325.00
Battery of three stall urinals, complete as specified, "B" quality.....	251.20
Add for each additional stall, complete as specified, "A" quality.....	103.00
Add for each additional stall, complete as specified, "B" quality.....	80.20
Single stall, with shields only, no fittings, "A" quality.....	94.00
Single stall, with shields only, no fittings, "B" quality.....	67.00
Two stall urinals, with shield pieces only, no fittings, "A" quality.....	176.00
Two stall urinals, with shield pieces only, no fittings, "B" quality.....	125.00
Three stall urinals, with shield pieces only, no fittings, "A" quality.....	256.00
Three stall urinals, with shield pieces only, no fittings, "B" quality.....	182.20
Each additional stall, with shield pieces only, no fittings, "A" quality.....	80.00
Each additional stall, with shield pieces only, no fittings, "B" quality.....	57.20

Note—If vitreous china outlet strainers are desired, add \$1.00 for each stall.



DETAIL OF "HINSDALE" URINAL

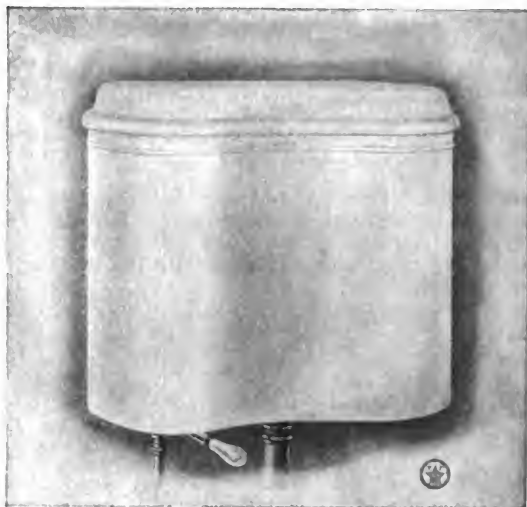


PLATE 950-A

SPECIFICATIONS—Vitreous china curved lowdown pattern closet tank; plate 950-A (Trenton Potteries Company). Fitted with approved type of brass flushing fittings with china handle compound lever at bottom; lever operating either up or down. Tank fastened to wall with two brass lag screws through back of tank.

DIMENSIONS: (Blue print with complete roughing-in measurements sent on application.)

TELEGRAPHIC CODE UTZAX

LIST PRICES

Vitreous china tank, complete with fittings.....	\$20.00
Vitreous china tank only, no fittings.....	11.00



PLATE 951-A

SPECIFICATIONS—Vitreous china lowdown pattern "Bellemeade" closet tank; plate 951-A (Trenton Potteries Company). Fitted with approved type of brass flushing fittings with china handle compound lever at top; lever operating to either right or left. Tank fastened to wall with two brass concealed lag screws through back of tank.

DIMENSIONS: (Blue print with complete roughing-in measurements sent on application.)

TELEGRAPHIC CODE..... UTTET

LIST PRICES

Vitreous china tank, complete with fittings.....	\$20.00
Vitreous china tank only, no fittings.....	11.00

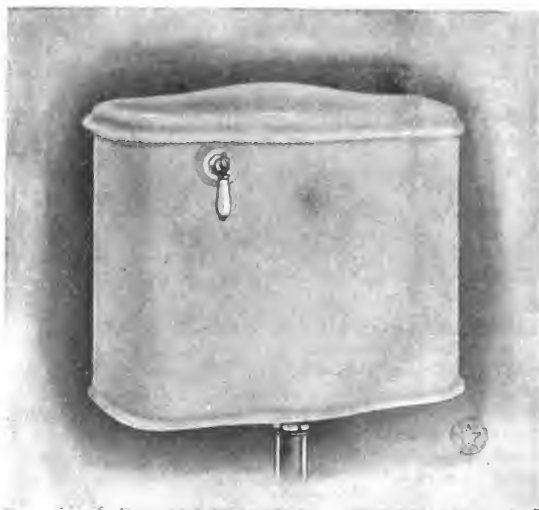


PLATE 953-A

SPECIFICATIONS—Vitreous china marcelled front lowdown pattern "Arcadia" closet tank; plate 953-A (Trenton Potteries Company). Fitted with approved type of brass flushing fittings with china handle compound lever at top; operating to either right or left. Tank fastened to wall with two brass concealed lag screws through the back of tank.

DIMENSIONS: (Blue print with complete roughing-in measurements sent on application.)

TELEGRAPHIC CODE..... UTTOW

LIST PRICES

Vitreous china tank, complete with fittings.....	\$20.00
Vitreous china tank only, no fittings.....	11.00

"A.B.C." SYSTEMS

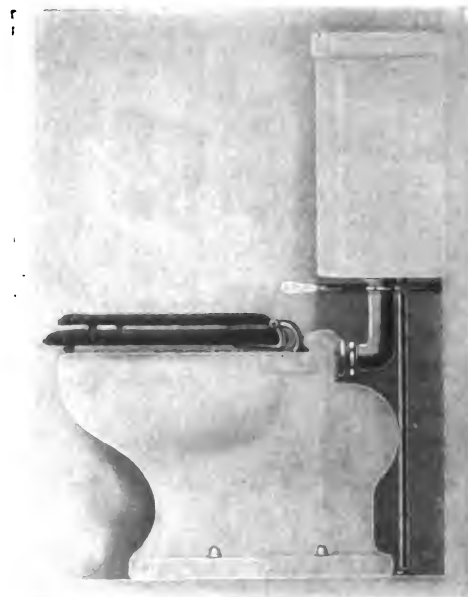


PLATE 967-A

SPECIFICATIONS—Vitreous china close roughing syphon jet closet and lowdown pattern vitreous china "Bellemeade" tank in combination; plate 967-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings, with china handle compound lever at bottom; lever operating either up or down, and with nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

DIMENSIONS: (Blue print with complete roughing-in measurements sent on application.)

TELEGRAPHIC CODE..... UTTUX

LIST PRICES

Combination, complete as specified.....	\$42.05
Closet only, without seat.....	17.75
Seat and lid only.....	4.30
Vitreous china tank, complete with fittings.....	20.00

Continued on next page



PLATE 970-A

SPECIFICATIONS—Vitreous china "Welling" syphon jet closet and lowdown pattern vitreous china "Bellemeade" tank in combination; plate 970-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings, with china handle compound lever at bottom; lever operating either up or down, and with nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing-in measurements sent on application.)
TELEGRAPHIC CODE..... UTNOR

LIST PRICES	
Combination, complete as specified.....	\$41.30
Closet only, without seat.....	17.00
Seat and lid only.....	4.30
Vitreous china tank, complete with fittings.....	20.00



PLATE 965-A

SPECIFICATIONS—Vitreous china syphon jet closet with extended lip in front, and lowdown pattern vitreous china "Bellemeade" tank in combination; plate 965-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back, and fitted with approved type of brass flushing fittings, with china handle compound lever at bottom; lever operating either up or down, and with nickel-plated brass supply pipe to floor. Closet fitted with special oak (or cherry) seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing-in measurements sent on application.)
TELEGRAPHIC CODE..... UTNEN

LIST PRICES	
Combination, complete as specified.....	\$49.00
Closet only, without seat.....	20.00
Seat and lid only.....	9.00
Vitreous china tank, complete with fittings.....	20.00



PLATE 971-A

SPECIFICATIONS—Vitreous china syphon action hopper and trap closet and lowdown vitreous china "Bellemeade" tank in combination; plate 971-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings, with china handle compound lever at top; lever operating to either right or left, and with nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid and with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing-in measurements sent on application.)
TELEGRAPHIC CODE..... UTNIP

LIST PRICES	
Combination, complete as specified.....	\$32.80
Closet only, without seat.....	8.50
Seat and lid only.....	4.30
Vitreous china tank, complete with fittings.....	20.00



PLATE 972-A

SPECIFICATIONS—Vitreous china center outlet syphon jet closet with drain screw and lowdown pattern vitreous china "Bellemeade" tank in combination; plate 972-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings, with china handle compound lever at top; lever operating to either right or left, and with nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing-in measurements sent on application.)
TELEGRAPHIC CODE..... UTTYZ

LIST PRICES	
Combination, complete as specified.....	\$42.30
Closet with drain screw only.....	18.00
Seat and lid only.....	4.30
Vitreous china tank, complete with fittings.....	20.00

"A.B.C." SYSTEMS

Continued on next page



PLATE 973-A

SPECIFICATIONS—Vitreous china syphon action hopper and trap closet and lowdown pattern vitreous china "Bellemeade" tank in combination; plate 973-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings, with china handle compound lever at bottom; lever operating either up or down, and with nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing in measurements sent on application.)
TELEGRAPHIC CODE..... UTVAT

LIST PRICES	
Combination complete as specified.....	\$32.80
Closet only, without seat.....	8.50
Seat and lid only.....	4.30
Vitreous china tank complete with fittings.....	20.00



PLATE 988-A

SPECIFICATIONS—Vitreous china syphon action hopper and trap closet with lowdown curved-front pattern "Curvino" vitreous china tank in combination; plate 988-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings with china handle compound lever at bottom; lever operating either up or down, with nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing in measurements sent on application.)
TELEGRAPHIC CODE..... UTVYB

LIST PRICES	
Combination complete as specified.....	\$32.80
Closet only without seat.....	8.50
Seat and lid only.....	4.30
Vitreous china tank complete with fittings.....	20.00



PLATE 982-A

SPECIFICATIONS—Vitreous china "Siwelclo" noiseless syphon jet closet with lowdown pattern vitreous china "Bellemeade" tank in combination; plate 982-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings with china handle compound lever at top; lever operating to either right or left, and with nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing in measurements sent on application.)
TELEGRAPHIC CODE..... UTMUR

LIST PRICES	
Combination complete as specified.....	\$45.30
Closet only, without seat.....	21.00
Seat and lid only.....	4.30
Vitreous china tank complete with fittings.....	20.00



PLATE 983-A

SPECIFICATIONS—Vitreous china syphon jet closet and lowdown pattern vitreous china curved front tank in combination; plate 983-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings with china handle compound lever at bottom, lever operating either up or down and with nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing in measurements sent on application.)
TELEGRAPHIC CODE..... UTVIA

LIST PRICES	
Combination complete as specified.....	\$41.30
Closet only, without seat.....	17.00
Seat and lid only.....	4.30
Vitreous china tank complete with fittings.....	20.00



PLATE 974-A

SPECIFICATIONS—Vitreous china "Welling" syphon jet closet and lowdown pattern panel-front vitreous china tank in combination; plate 974-A (Trenton Potteries Company). Tank fastened to wall with concealed hangers, and fitted with approved type of brass flushing fittings, with china indexed push button at bottom, and nickel-plated brass supply pipe to wall, with compression controlling valve. Closet fitted with mahogany finish cherry seat and lid and with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing in measurements sent on application.)
TELEGRAPHIC CODE..... UTVEV

LIST PRICES	
Combination complete as specified.....	\$42.80
Closet only, without seat.....	17.00
Seat and lid only.....	4.30
Vitreous china tank complete with fittings.....	21.50



PLATE 989-A

SPECIFICATIONS—Vitreous china center outlet syphon jet closet and lowdown pattern panel-front vitreous china tank in combination; plate 989-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings, with china indexed push button at bottom and nickel-plated brass supply pipe to wall, with compression controlling valve. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing in measurements sent on application.)
TELEGRAPHIC CODE..... URPOP

LIST PRICES	
Combination complete as specified.....	\$42.80
Closet only, without seat.....	17.00
Seat and lid only.....	4.30
Vitreous china tank complete with fittings.....	21.50



PLATE 985-A

SPECIFICATIONS—Vitreous china syphon jet closet and lowdown pattern vitreous china square tank in combination; plate 985-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank and fitted with approved type of brass flushing fittings with china handle compound lever at top; lever operating to either right or left, and with supply pipe to wall with compression controlling valve. Closet fitted with white celluloid veneered seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing in measurements sent on application.)
TELEGRAPHIC CODE..... UTVOX

LIST PRICES	
Combination complete as specified.....	\$50.50
Closet only, without seat.....	17.00
Seat and lid only.....	13.00
Vitreous china tank complete with fittings.....	20.50



PLATE 986-A

SPECIFICATIONS—Vitreous china reversed trap syphon action closet and lowdown square pattern vitreous china tank in combination; plate 986-A (Trenton Potteries Company). Tank fastened to wall with two brass concealed lag screws through back of tank. Fitted with approved type of brass flushing fittings with china handle compound lever at top; lever operating to either right or left and with nickel plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

DIMENSIONS—(Blue print with complete roughing in measurements sent on application.)
TELEGRAPHIC CODE..... UTVUZ

LIST PRICES	
Combination complete as specified.....	\$34.30
Closet only, without seat.....	10.00
Seat and lid only.....	4.30
Vitreous china tank complete with fittings.....	20.00



PLATE 994-A

PLATE 994-A
DIMENSIONS—Blue print with complete roughing-in measurements furnished on application.
TELEGRAPHIC CODE.... URPIN
LIST PRICES
 Combination complete as specified..... \$41.30
 Closet only, without seat.. 17.00
 Seat and lid only..... 4.30
 Vitreous china tank complete with fittings..... 20.00

SPECIFICATIONS—Vitreous china "Welling" syphon jet closet and vitreous china high tank in combination; plate 994-A (Trenton Potteries Company). Tank fastened to wall with concealed hangers and fitted with approved type of brass flushing fittings, with pull chain with china handle and nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.

PLATE 995-A
DIMENSIONS—Blue print with complete roughing-in measurements furnished on application.
TELEGRAPHIC CODE... UTWEW
LIST PRICES
NOTE—Closet shown in this combination is a specialty. Prices upon this combination will be furnished upon request.



PLATE 995-A

SPECIFICATIONS—Vitreous china syphon jet closet with large raised rear vent and vitreous china high tank in combination; plate 995-A (Trenton Potteries Company). Tank fastened to wall with concealed hangers; fitted with approved type of brass flushing fittings with pull chain with china handle; nickel-plated brass flushing pipe and nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid, with nickel-plated brass hinges.



PLATE 997-A

PLATE 997-A
DIMENSIONS—Blue print with complete roughing-in measurements furnished on application.
TELEGRAPHIC CODE.... UTWIX
LIST PRICES
 Combination complete as specified..... \$32.80
 Closet only, without seat.. 8.50
 Seat and lid only..... 4.30
 Vitreous china tank complete with fittings..... 20.00

SPECIFICATIONS—Vitreous syphon action hopper and trap closet and vitreous china high tank in combination; plate 997-A (Trenton Potteries Company). Tank fastened to wall with concealed hangers and fitted with approved type of brass flushing fittings, with pull chain with china handle; nickel-plated brass flushing pipe and nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid with nickel-plated brass hinges.

"A.B.C." SYSTEMS

PLATE 998-A
DIMENSIONS—Blue print with complete roughing-in measurements furnished on application.
TELEGRAPHIC CODE.... UTWOZ
LIST PRICES
 Combination complete as specified..... \$34.30
 Closet only, without seat.. 10.00
 Seat and lid only..... 4.30
 Vitreous china tank complete with fittings..... 20.00

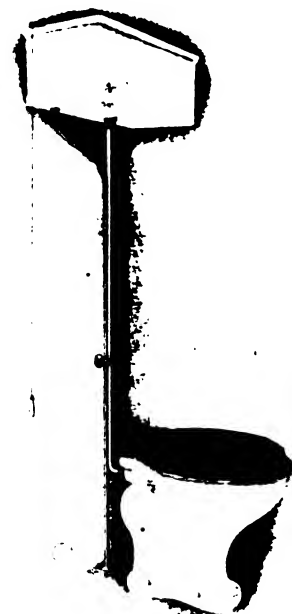


PLATE 998-A

SPECIFICATIONS—Vitreous china reverse trap syphon action closet for close roughing in and vitreous china high tank in combination; plate 998-A (Trenton Potteries Company). Tank fastened to wall with concealed hangers; fitted with approved type of brass flushing fittings, with pull chain with china handle; nickel-plated brass flushing pipe and nickel-plated brass supply pipe to floor. Closet fitted with mahogany finish cherry (or oak) seat and lid with nickel-plated brass hinges.

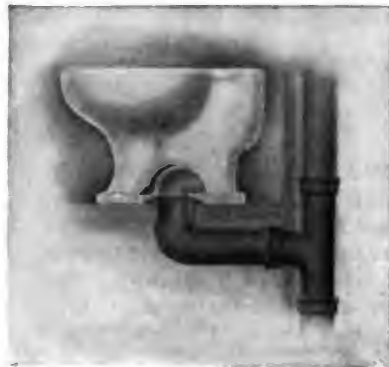
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THE DONOVAN FLANGE FOR WATER CLOSET CONNECTION

THE DONOVAN FLANGE—A simplified, effective method for connecting water closet to the soil pipe. Saves time and money and reduces cost of operation and maintenance. The Donovan Flange used in connection with our water closets solves the problem of providing a simple and mechanically correct principle, by which earthenware is properly and directly connected to the drainage system. This is obtained at a cost within the reach of every owner, as it does not exceed that of the old method of connecting closets. In the past you have frequently questioned whether the packing on which you have depended to make a tight joint had been sufficiently compressed. This always being a matter of doubt, you had no means of knowing positively except by an air test. The Donovan Flange eliminates this weakness. In the Donovan Flange the work is separated. One set of nuts secures the fixture rigid, the other set compresses the packing. Failure to make tight is immediately made evident by leakage of water on the floor at base of closet. The Donovan Flange is used in conjunction with a closet made with reduced sewer ring. It is, therefore, necessary to order the Donovan Flange complete with water-closet bowl. List price of Flange \$1.50. Price of closet remains the same. Any staple closet manufactured by THE TRENTON POTTERIES COMPANY can be furnished with the Donovan Flange. Upon request a flange will be presented for architects' inspection and approval.

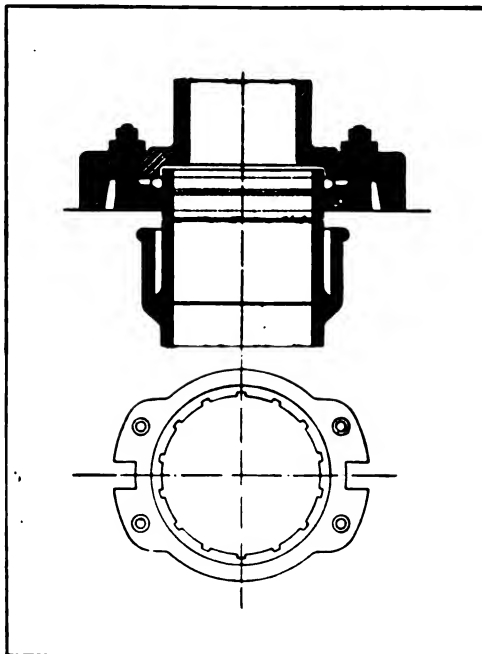
THE QUESTION OF CLOSET CONNECTION SETTLED

—The method of connecting water closets to the soil pipe by means of lead bend, brass calking nipple, solder and flange bolt has never satisfied the architect, owner, plumber or others interested in the development of sanitation. The old method left the question of a perfect joint unsolved. As the closet, by the use of the Donovan Flange, can be connected direct to the iron pipe, the difference in cost is obviously in the owner's favor, thus settling these two vital questions.



CLOSET AND PIPE CONNECTED

SETTLEMENT—Frequently occurs in soil pipe and floor at the same time. Basing our opinion on fixtures which have been connected to iron pipe without any lead connection, the danger of breaking water closet from this cause is so remote as to be negligible. The Donovan Flange, which THE TRENTON POTTERIES COMPANY is placing on the market, covers this essential feature. When the pipe is brought one inch above the flooring, whether it be of tile, concrete, wood or other material, the flange can be fitted tightly around pipe and there is no necessity of plumber cutting same away to provide for shaving lead bend or placing hub fitting around the pipe below floor. When setting the closet, by tightening up with nuts provided, the gasket is drawn up to where it belongs and is secured.



SHOWING SECTIONAL VIEW AND TOP VIEW OF FLOOR PLATE OF FLANGE. FLOOR PLATE MADE TO TAKE ANY KIND OF PIPE



THE DONOVAN FLANGE

A FEW REASONS WHY OF INTEREST TO ARCHITECTS, OWNERS, PLUMBING INSPECTORS AND HEALTH BOARDS

First. An absolutely tight joint for the prevention of sewer air passing into building.

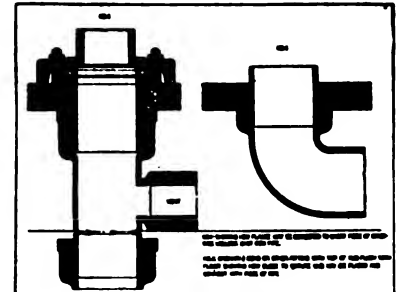
Second. Immediate evidence of a defective condition by leakage of water, so that attention must be given it.

Third. A means for tightening packing without removing fixture.

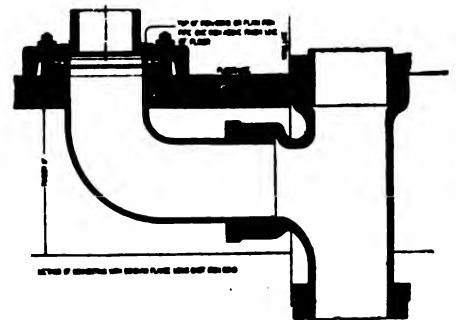
Fourth. The complete elimination of lead connections between earthenware and iron soil pipe, at less cost than in the old methods.

ARCHITECTS' REQUIREMENTS—In presenting the Donovan Flange THE TRENTON POTTERIES COMPANY has met the demand of the architects in securing a flange which absolutely prevents sewer gas escaping at the point of connection between the closet and the rough plumbing. Under the old method it is impossible to instantly determine leakage of sewer gas at this point, frequently caused by settlement, shrinkage and the drying of defective packing used. If the joint becomes loose from use or from any cause, where the Donovan Flange is used, the defect is instantly indicated by water appearing at the defective point and can be overcome by the tightening of the bolts, without delay and the expense of removing the bowl. The feature of economy in installation and in maintenance, coupled with the sanitary advantages, make the Donovan Flange appeal to architects and owners.

HOW TO SPECIFY—"All closets made with reduced sewer ring to fit the Donovan Flange."



NO. 1 FLANGE CONNECTED TO OTHERWISE USELESS CAST-IRON PIPE



METHOD OF CONNECTING, WITH DONOVAN FLANGE USING CAST-IRON BEND 1 IN. ABOVE FLOOR

COMPARATIVE COST

New Method	
Donovan Flange list.....	\$1.50
Iron Bend.....	.50
Labor.....	.25
Result: Perfect joint at floor.	
Old Method	
4" Lead Bend.....	\$0.85
4" Brass Calking Nipple.....	.40
1½ lbs. Solder.....	.30
1 Brass Flange Bolt.....	.35
Labor.....	.50
Result: Doubtful joint at floor.	

The figures presented of old method are less than the actual cost and are based on doing the work as economically as possible, not mentioning other items in cost, as waste pipe, etc. Illustration shows advantages over over-slip joint.



PLATE 1010-A

SPECIFICATIONS—Vitreous china 14" high syphon jet closet, with angle wall flange; plate 1010-A (Trenton Potteries Company); for high tank.

TELEGRAPHIC CODE USGYK
Price on application.

PLATE 1010-A
This closet is of syphon jet construction, with oval bowl, top supply and bottom outlet. Being made to stand flush against the wall, with foot extended to the wall flange, there is no fouling space behind the closet. Stands but 14 inches high and is guaranteed to operate satisfactorily.

PLATE 1015-A
This closet is of the same general design as plate 1010-A, excepting that it is made for fireproof construction with back supply and wall outlet. It stands but 14 inches high and is guaranteed to operate satisfactorily with a high tank.



PLATE 1015-A

SPECIFICATIONS—Vitreous china 14" high plain syphon jet closet, with angle wall flange; plate 1015-A (Trenton Potteries Company); with back supply and back outlet.

TELEGRAPHIC CODE USGUJ
Price on application.



PLATE 1041-A

SPECIFICATIONS—Vitreous china plain syphon jet closet; plate 1041-A (Trenton Potteries Company); with patented vertical local vent and with crockery vent arm for (high or low) tank.

TELEGRAPHIC CODE UNTYT
LIST PRICES
Closet only..... \$19.50
Crockery vent arm with bolt..... 1.25

PLATE 1041-A
This closet is of syphon jet construction, with oval bowl and with vertical local vent, above which is fastened with bolt a crockery vent arm extending to the wall. Closet is made for either high or low tank.

PLATE 1067-A
This closet is of syphon jet construction, with oval bowl and with shelf extended back so as to allow of supply at the back coming through the wall. The outlet is into the floor.



PLATE 1067-A

SPECIFICATIONS—Vitreous china plain oval syphon jet closet; plate 1067-A (Trenton Potteries Company); with extended back supply and bottom outlet.

TELEGRAPHIC CODE UPBAV
Price on application.



PLATE 1025-A

SPECIFICATIONS—Vitreous china fireproof plain syphon jet closet with angle wall flange; plate 1025-A (Trenton Potteries Company); with back supply and back outlet.

TELEGRAPHIC CODE UTGUK
LIST PRICE—Closet only..... \$29.25

PLATE 1025-A
Angle wall flange is ground to set true against tile or marble wall, consequently no place for dirt and filth to collect. Syphonic action is strong and instantaneous. Deep water seal, leaving no escape for sewer gas.

PLATE 1060-A
This closet embodies features which make it practically noiseless outside its immediate environment. Equally good with high or low tank and having a strong syphonage.



PLATE 1060-A

SPECIFICATIONS—Vitreous china plain oval "Siwelclo" noiseless syphon jet closet; plate 1060-A (Trenton Potteries Company).

TELEGRAPHIC CODE UTGAF
LIST PRICE—Closet only..... \$21.00



PLATE 1070-A

PLATE 1070-A

This syphon jet closet is made with wall outlet for fireproof construction. It is made either for spud outlet connection, as shown, or with flange outlet connection. Guaranteed to work successfully with a high tank.

SPECIFICATIONS—Vitreous china plain oval syphon jet closet, with top supply and wall outlet; plate 1070-A; (Trenton Potteries Company) for high tank.

TELEGRAPHIC CODEURLIK
LIST PRICE—Closet only.....\$18.50
Brass outlet spud connection complete..... 5.00

PLATE 1075-A

This closet is our regular center outlet syphon jet pattern, with raised lip on front rim of the bowl, for installation in ladies' toilet rooms. It is guaranteed to operate properly with either high or low tank.

SPECIFICATIONS—Vitreous china plain oval syphon jet closet, with integral raised lip on front rim of bowl; plate 1075-A; (Trenton Potteries Company) for (high or low) tank.

TELEGRAPHIC CODEUPBEW
Price on application.



PLATE 1075-A



PLATE 1078-A

PLATE 1078-A

This closet is of syphon jet construction, with top supply, large raised rear vent and wall outlet. Used generally in railroad stations and public buildings. Operates with high tank or flush valve.

SPECIFICATIONS—Vitreous china plain syphon jet closet, with top supply, raised rear vent and flanged for wall outlet; plate 1078-A (Trenton Potteries Company).

TELEGRAPHIC CODEUSFOG
Price on application.

PLATE 1089-A

The "Welling" raised rear vent closet has two distinct features. The raised rear vent is completely flushed when closet operates and the vent passage is unwinding from bowl to wall.

SPECIFICATIONS—Vitreous china plain oval syphon jet "Welling" closet, with top supply, oval raised rear vent and bottom outlet; plate 1089-A; (Trenton Potteries Company) for (high or low) tank.

TELEGRAPHIC CODEUTRIS
Price on application.



PLATE 1089-A



PLATE 1096-A

PLATE 1096-A

This closet has a small raised rear vent, the inside diameter of vent being 2 1/4 inches. It is made for either high or low tank.

SPECIFICATIONS—Vitreous china plain oval syphon jet closet, with top supply and small raised rear vent, plate 1096-A; (Trenton Potteries Company) for (high or low) tank.

TELEGRAPHIC CODEUPBIX
Price on application.

"A.B.C." SYSTEMS

PLATE 1097 1/2-A

The feature of this closet is a short integral crockery sleeve running back to wall, covering the inlet flushing connection to closet bowl. Diagrams and descriptions of the various uses of the "Webster" Arm will be furnished on application.

SPECIFICATIONS—Vitreous plain oval syphon jet closet, with "Webster" arm for back supply, bottom outlet; plate 1097 1/2-A (Trenton Potteries Company).

TELEGRAPHIC CODEUPBUB
Price on application.



PLATE 1097 1/2-A

Continued on next page



PLATE 1099-A

SPECIFICATIONS—Vitreous china plain oval center outlet syphon jet closet; plate 1099-A (Trenton Potteries Company). Fitted with "Trento" china indexed push button flushing valve, cherry seat and lid, with nickel-plated brass hinges.

NOTE—This special closet is operated by pushing the button on the flush valve running through the crockery. The position of the button, on the right of the person using the closet, provides a most convenient as well as space-saving device and prevents a waste of water, as the valve cannot be held open. The supply from the valve can be either from the floor or from the wall.

TELEGRAPHIC CODE..... URZIX
LIST PRICE—Complete as specified..... \$62.00



PLATE 1115-A

SPECIFICATIONS—Vitreous china plain syphon action hopper and trap closet; plate 1115-A (Trenton Potteries Company). Fitted with golden oak seat and brass hinges, with seat action flushing valve.

NOTE—This closet stands 14" high—the correct size for schools of every grade. Flushes strongly upon release of seat. All fittings are of extra heavy brass.

TELEGRAPHIC CODE..... UTSOV
Price on application.



PLATE 1213-A

SPECIFICATIONS—Vitreous china plain syphon action hopper and trap closet, with small raised rear vent; plate 1213-A (Trenton Potteries Company).

TELEGRAPHIC CODE..... URZUB
Price on application.

"A.B.C." SYSTEMS

PLATE 1103-A

This syphon jet closet works quickly and thoroughly, has a deep water seal and large water surface in bowl. Is especially adapted to railroad stations and public buildings.



PLATE 1103-A

SPECIFICATIONS—Vitreous china plain oval syphon jet closet, with oval raised rear vent and with "Webster" arm for back supply; plate 1103-A (Trenton Potteries Company).

TELEGRAPHIC CODE..... UTSAR
Price on application.



REAR VIEW, PLATE 1103-A

PLATE 1235-A

This is a standard syphon action hopper and trap closet, with the addition of a sanitary extended lip in front, making a most sanitary closet for public use, as there can be no dripping of urine from rim to the floor. Closet operates equally well with either low or high tank.



PLATE 1235-A

SPECIFICATIONS—Vitreous china plain syphon action hopper and trap closet, with extended lip at front of rim; plate 1235-A (Trenton Potteries Company); for (high or low) tank.

TELEGRAPHIC CODE..... UTPIR
LIST PRICE—Closet only..... \$10.00



TOP VIEW, PLATE 1235-A

The closet seat will always be clean where this closet is used. In schools, where carelessness predominates and cleanliness is most important, all closets should have the sanitary extended lip in front. This closet is moderate in price, requires less janitor service to keep the toilet room in condition, and can be advantageously used in other public buildings as well as in schools.

Continued on next page



PLATE 1301-A

SPECIFICATIONS—Vitreous china plain "Bidet" closet; plate 1301-A (Trenton Potteries Company); fitted with nickel-plated brass combination hot and cold supply and waste fittings with china indexed compression valve handles and china index on waste.

NOTE—There is no spray attachment with this fitting.

TELEGRAPHIC CODE USKAH
 Price on application.



PLATE 1359-A

SPECIFICATIONS—Vitreous china plain oval integral china seat prison washdown closet, with back supply and wall outlet; plate 1359-A (Trenton Potteries Company).

TELEGRAPHIC CODE USBEZ
NOTE—If closet is desired with outlet into floor specify same clearly.

Closet with floor outlet
 TELEGRAPHIC CODE USKIK



PLATE 1505-A

SPECIFICATIONS—Vitreous china "Troy" syphon jet urinal, with back supply and wall outlet; plate 1505-A (Trenton Potteries Company); fitted with brass inlet and outlet connections.

TELEGRAPHIC CODE UNXUA

LIST PRICES
 Complete as specified \$17.50
 Urinal only 15.00
 Brass inlet and outlet connections 2.50

NOTE—If "Troy" urinal is desired with top supply and bottom outlet specify as 1506-A.

TELEGRAPHIC CODE UNZET
 Price on application.

PLATE 1552-A

SPECIFICATIONS—Vitreous china "Morse" washout urinal, with back supply and wall outlet; plate 1552-A (Trenton Potteries Company); fitted with brass inlet and outlet connections.

TELEGRAPHIC CODE URZOZ

LIST PRICES
 Complete as specified \$11.75
 Urinal only 9.25

NOTE—If "Morse" urinal is desired with top supply and wall outlet, specify as plate 1550-A.

TELEGRAPHIC CODE URXOX
 Price on application.

PLATE 1552-A

"A.B.C." SYSTEMS

PLATE 1360-A

This closet is similar in operation to plate 1359-A. It has seat attachment, back supply and wall outlet. (Can be furnished with floor outlet if so specified.) Generally used for prison installation.



PLATE 1360-A

SPECIFICATIONS—Vitreous china plain oval "Improved" prison washdown closet, with seat attachment shelf (for attaching wooden seat), back supply and wall outlet; plate 1360-A (Trenton Potteries Company).

TELEGRAPHIC CODE USJII
 Price on application.

NOTE—If closet is desired with floor outlet specify same clearly.

TELEGRAPHIC CODE USKEJ
 Price on application.

PLATE 1364-A

This closet is extra heavy, with top supply, integral crockery seat and large raised rear vent. It is adapted to factory or school installation and is an especially good working washdown closet.



PLATE 1364-A

SPECIFICATIONS—Vitreous china "Giant" washdown closet, with integral china seat; large raised rear vent, top supply, floor outlet; plate 1364-A (Trenton Potteries Company).

TELEGRAPHIC CODE USBAX
 Price on application.



PLATE 1510-A—Front View



PLATE 1510-A—Rear View

SPECIFICATIONS—Vitreous china "New York" jet urinal, with top supply and wall outlet through rough brass fittings, as shown; plate 1510-A (Trenton Potteries Company).

TELEGRAPHIC CODE UPFAZ

LIST PRICES
 Complete as specified \$20.00
 Urinal only 15.00
 Brass outlet fitting with bolts 5.00

Continued on next page



PLATE 1553-A

SPECIFICATIONS—Vitreous china washout urinal with beehive strainer, back supply with wall outlet; plate 1553-A (Trenton Potteries Company).

PLATE 1553-A
TELEGRAPHIC CODE
Price on application.

URPID

PLATE 1565-A

SPECIFICATIONS—Vitreous china washout urinal with hood and local vent, back supply and wall outlet; plate 1565-A (Trenton Potteries Company).

NOTE—This urinal conforms to the United States Government specifications for Type F 4 Urinal.

TELEGRAPHIC CODE
Price on application.



PLATE 1565-A

UNXYX

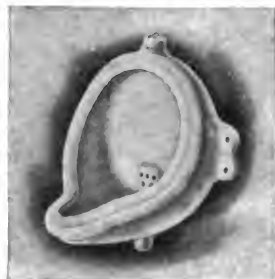


PLATE 1570-A

Numbers.....	1	2	3
Sizes.....	15" x 18"	13" x 15"	12" x 14"
TELEGRAPHIC CODE..	UPCUC	UPCYD	UPDAX
LIST PRICES			
Urinal only.....	\$10.00	\$8.00	\$7.00

PLATE 1570-A
SPECIFICATIONS—Vitreous china flat back "Bedfordshire" urinal with lip; plate 1570-A (Trenton Potteries Company).

PLATE 1572-A

Numbers.....	1	2	3
TELEGRAPHIC CODE	UPCEX	UPCIZ	UPCOB
Sizes.....	15" x 18"	13" x 15"	12" x 14"
LIST PRICES			
Urinal only.....	\$8.00	\$6.00	\$5.00



PLATE 1572-A

SPECIFICATIONS—Vitreous china flat back "Bedfordshire" urinal without lip; plate 1572-A (Trenton Potteries Company).



PLATE 1580-A

Numbers...	1	2	3
TELEGRAPHIC CODE...	UPDEZ	UPFEB	UPDIB
Size.....	13"x13"	11½"x11½"	10½"x10½"
LIST PRICES			
Urinal only.....	\$8.00	\$6.00	\$5.00

PLATE 1580-A
SPECIFICATIONS—Vitreous china corner "Bedfordshire" urinal without lip; plate 1580-A (Trenton Potteries Company).

PLATE 1582-A

Numbers...	1	2	3
Size.....	13" x 13"	11½" x 11½"	10½" x 10½"
TELEGRAPHIC CODE...	UPDOC	UPDUD	UPDYF
LIST PRICES			
Urinal only.....	\$10.00	\$8.00	\$7.00

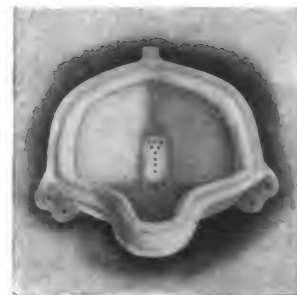


PLATE 1582-A

SPECIFICATIONS—Vitreous china corner "Bedfordshire" urinal with lip; plate 1582-A (Trenton Potteries Company).



PLATE 1586-A

PLATE 1586-A

NOTE—Specifications and prices cover one urinal and one tank.
SPECIFICATIONS—Vitreous china syphon jet lipped pedestal urinal with high back; plate 1586-A (Trenton Potteries Company); in conjunction with vitreous china urinal tank of three gallons capacity; supported by concealed hangers, and fitted with automatic flushing fittings complete.

DIMENSIONS:	
Urinal, height over all.....	29"
Floor to top of lip.....	20"
Width	13½"

LIST PRICES:	
Single urinal complete as specified.....	\$55.00
Single urinal as specified but with pull handle flushing fittings.....	53.00

NOTE—If syphon action washdown pedestal urinal is substituted, deduct from above lists \$2.00.

WHITE CHINA SPECIALTIES

These White Bone China and Vitreous China Bathroom and Toilet Specialties fulfill the demand of present-day sanitarians who require the installation of glazed china wherever it is practicable in the bathroom, kitchen or laundry. Our primary idea in developing the patterns shown here is the fulfillment of requirements not taken care of by the ordinary metal trimmings. White china specialties have smooth glazed surfaces which will not collect dirt; are so easily installed on tile, stone or wood-work that they do not require the services of a specialist and may be used to replace metal fixtures already installed.

In addition to the sanitary advantages of these specialties the appearance of any room will be greatly enhanced by the use of white china accessories.

Without qualification we recommend these specialties, as they have been fully tested in actual use and meet all of the requirements for which they are intended.

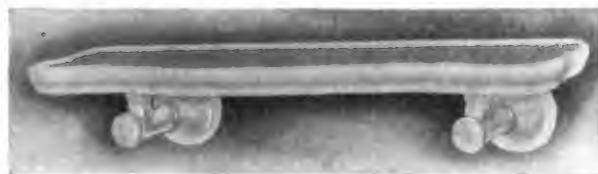


PLATE 1638-A

VITREOUS CHINA SHELF WITH BONE CHINA BRACKETS
 —Shelf made of "Impervio" Vitreous China, with brackets of pure white bone china, the same material as used in the finest dinner ware. Fastened to wall by means of screws cemented into the brackets.

Size of shelf, 22 x 5 inches.

LIST PRICES

Shelf and brackets, complete with all fittings.....	\$11.60
Vitreous China shelf only.....	5.00
Extra for coin gold decoration.....	2.00



PLATE 1611-A

WHITE BONE CHINA TOOTH BRUSH HOLDER (with bone china knob)—Made of pure white bone china, the same material as used in the finest dinner ware. Attached to the wall by means of a long screw, cemented into the knob and running through the bracket.

LIST PRICES

Complete fixture as shown.....	\$3.00
Extra for coin gold decoration.....	.70



PLATE 1621-A

WHITE BONE CHINA SOAP CUP AND HOLDER (with bone china knob)—Made of pure white bone china, the same material as used in the finest dinner ware. Attached to wall by means of a long screw, cemented into the knob and running through the bracket.

LIST PRICES

Complete fixture as shown.....	\$3.00
Extra for coin gold decoration.....	.70



PLATE 1616-A

White bone china drinking mug (with bone china knob), made of pure white bone china, the same material as used in the finest dinner ware. Attached to wall by means of a long screw cemented into the knob and running through the bracket.

LIST PRICES

Complete fixture as shown.....	\$3.00
Extra for coin gold decoration.....	.70



PLATE 1625-A

White bone china coat, cuff or towel hanger, made of pure white bone china, the same material as used in the finest dinner ware. Fastened to wall by means of screw cemented into hanger.

DIMENSIONS—Diameter of flange, 3 1/4"; end of hanger to wall, 5".

LIST PRICES

Fixture as described.....	\$2.00
Extra for coin gold decoration.....	.75

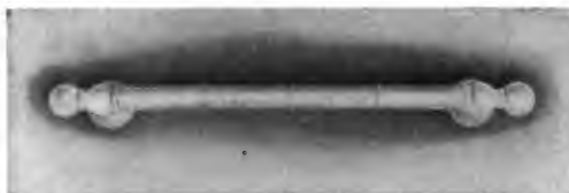


PLATE 1636-A

White bone china towel bar (four sections), made of pure white bone china, the same material as used in the finest dinner ware. Made in sections and fastened together by means of a brass rod. Attached to wall by screws cemented into the knobs.

DIMENSIONS—Length over all, 32"; diameter of rod, 1 1/2"; length of single section, 6".

NOTE: Can be furnished in two or three sections if desired.

LIST PRICES

With fittings complete, as above described.....	\$13.10
Extra for coin gold decoration.....	2.00
Extra for each additional section, including fittings.....	2.00



PLATE 1630-A

White bone china roll toilet paper rod, made of pure white bone china, the same material as used in the finest dinner ware. Fastened to wall by means of screw cemented into hanger.

DIMENSIONS—Diameter of flange, 3 1/4"; end of hanger to wall, 6 1/4".

LIST PRICES

Fixture as above described.....	\$1.50
Extra for coin gold decoration.....	.75

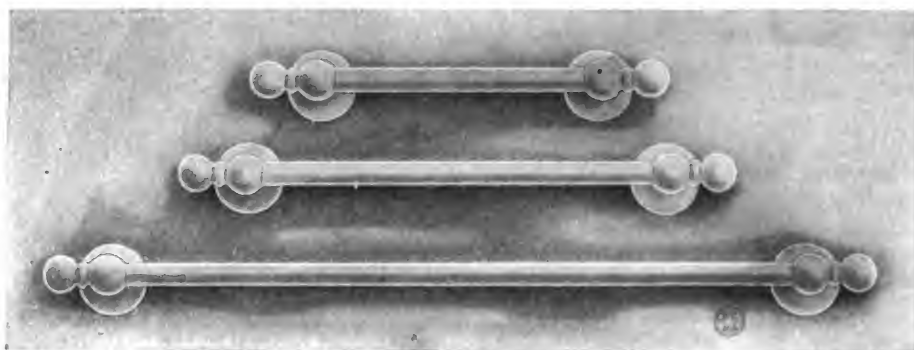


PLATE 1633-A

WHITE OPAQUE GLASS TOWEL BARS WITH BONE CHINA
 KNOBS AND BRACKETS

PLATE 1633-A

These bars are made from the best white opaque glass obtainable, while the knobs and brackets are from our pure white bone china-ware, the same material as used in the finest English china. Easily attached to wall by means of screws cemented into the brackets, china and glass match almost perfectly. Fixtures will withstand customary usage. Made in four sizes.

LIST PRICES	
18" long.....	\$5.70
24" long.....	6.00
36" long.....	6.50
48" long.....	7.00
48" size with centre support.....	8.00



PLATE 1690-A

New style white bone china sponge holder, made of pure white bone china, the same material as the finest dinner ware. Fastened to wall by means of concealed screws.

DIMENSIONS—Over all, 11"; top to bottom, 9".

LIST PRICES	
Fixture as above described.....	\$3.00
Extra for coin gold decoration.....	2.00



PLATE 1693-A

New style white bone china comb and brush holder, made of pure white bone china, the same material as used in the finest dinner ware. Fastened to wall by means of concealed screws.

DIMENSIONS—Over all, 13"; top to bottom, 7½".

LIST PRICES	
Fixture as above described.....	\$4.00
Extra for coin gold decoration.....	2.20



PLATE 1694-A

New style white bone china loose sheet paper holder, made of pure white bone china, the same material as used in the finest dinner ware. Fastened to wall by means of concealed screws.

DIMENSIONS—Over all, 9"; top to bottom, 9¼".

LIST PRICES	
Fixture as above described.....	\$2.00
Extra for coin gold decoration.....	2.00

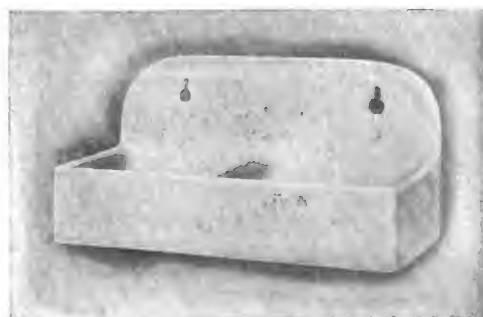


PLATE 1618-A

White bone china combination soap and sponge receptor, made of pure white bone china, the same material as used in the finest dinner ware. Fastened to wall by means of either hooks or screws.

DIMENSIONS—Length, 9"; depth, 4¼"; height, 4½"

LIST PRICE	
As above described.....	\$3.00



PLATE 1692-A

New style white bone china soap holder, made of pure white bone china, the same material as used in the finest dinner ware. Fastened to wall by means of concealed screws.

DIMENSIONS—Over all, 8"; top to bottom, 5¼".

LIST PRICES	
Fixture as above described.....	\$2.00
Extra for coin gold decoration.....	1.80



PLATE 1647-A

White vitreous china outlet strainer (for urinals), made of pure white vitreous china. Prevents the passage into the trap of matches, waste, etc.

DIMENSIONS—Diameter of base, 2"; height, 2¼".

LIST PRICES	
Each.....	\$0.80
Per dozen.....	9.60

The Galard Company

Manufacturers of Plumbing Specialties

Headquarters and Factory
327-341 SIXTH AVENUE
NEWARK, N. J.



PRODUCTS—SANITARY "OMALA" WATER CLOSET SEATS, LOW-DOWN AND HIGH FLUSH TANKS, BATHROOM TABOURETS AND CHAIRS, MEDICINE CABINETS, BATHTUB GRAB RAILS, TOWEL BARS, BATHTUB SEATS, OVAL AND SQUARE MIRRORS, CLOTHES TREES, ETC.

DESCRIPTION—We manufacture complete all the various fixtures here illustrated. Their prime characteristics are their long wearing, genuinely economical qualities and our "OMALA" Sanitary White Finish. "OMALA" is a non-inflammable but not fireproof chemical preparation, compounded from a secret formula, and must not be confounded with celluloid or pyralin sheet veneer. It enters into and strongly adheres to the fibers of the wood. "OMALA" is guaranteed not to discolor from any cause and to **permanently stay white**. It resists urine, sewer gases, acids, alkalis and moisture. It will not crack, craze, check or peel, and is designed to withstand cleaning with sapolio or other household cleaning materials.

"OMALA" is the only permanent sanitary finish for toilet-room fixtures. The character of our references fully supports this statement.

"OMALA" RE-FINISHING—This process of White-Finish-

ing can also be applied to new or old wood *varnished* fixtures. The finish is permanent and the prices moderate.

MEDICINE CABINETS—"Omala" Medicine Cabinets are hand-made by master cabinet workers, and include our own original and exclusive features. Of first-quality kiln-dried wood, with backing of mirror and box of 3-ply maple veneer. Mirrors are of finest quality selected French beveled plate. Shelves of heavy plate glass on adjustable brackets. Hinges of heavily nickel-plated bronze.

TANKS—"Omala" Low-down Tanks are built of selected close-grain, kiln-dried birch or cherry woodwork, with bent corners, leaving no outside joints to come apart. All tanks carried in stock are lined with 12-oz. copper, with joints interlocked and soldered outside. Heavier lining furnished on specification, at slight additional cost. The valves and other operating devices are our latest improvements developed during our years of practical experience.

"OMALA" TOILET SEATS—Constructed of selected straight, close-grained, kiln-dried hardwood and are finished with "Omala," a very hard wear-resisting, non-absorbent finish. They are equipped with the finest quality heavy cast-brass hinges and pure gum rubber bumpers.



MEDICINE CABINET NO. 2



MEDICINE CABINET NO. 5



L. D. TANK NO. 6



MEDICINE CABINET NO. 9



MEDICINE CABINET NO. 12



MEDICINE CABINET NO. 15

"A.B.C." SYSTEMS

Continued on next page



TOILET SEAT NO. 2



TOILET SEAT NO. 30



TOILET SEAT NO. 75



HIGH TANK NO. 4

PRICE LIST—MEDICINE CABINETS

Plate Number	Overall Size	Mirror Size	Shelves	Price
1.	18 1/2" x 16 1/2" x 7 1/2"	10" x 12"	2.....	\$11.00
2.	22" x 18 1/2" x 7 1/2"	12" x 16"	2.....	14.25
3.	30" x 22" x 7 1/2"	16" x 24"	3.....	18.75
4.	18" x 14" x 5 1/2"	10" x 14"	2.....	12.50
5.	24" x 18 1/2" x 5 1/2"	14" x 20"	3.....	20.00
6.	28" x 22" x 6"	18" x 24"	4.....	25.00
7.	21" x 17" x 10 1/2"	10" x 16"	2.....	15.00
7A.	20" x 17" x 9 1/2"	10" x 16"	2.....	15.00
8.	32" x 26" x 2"	18" x 24"	4.....	27.50
9.	28" x 22" x 1 1/2"	14" x 20"	3.....	22.50
10.	22" x 18 1/2" x 1 1/2"	10" x 14"	2.....	16.25
11.	38" x 26" x 2"	18" x 24"	4.....	29.50
12.	34" x 22 1/2" x 2"	14" x 20"	3.....	23.75
13.	26" x 17" x 2"	10" x 14"	2.....	17.50
14.	19" x 15" x 1 1/2"	10" x 14"	2.....	15.00
15.	25" x 19" x 1 1/2"	14" x 20"	3.....	18.75
16.	29 1/2" x 23 1/2" x 1 1/2"	18" x 24"	4.....	22.50



TOILET SEAT NO. 102

PRICE LIST—W. C. TANKS

Plate Number	Price
5. Bent wood, low down.....	\$15.75
6. Bent wood, low down, with extra corrugated inner lining..	17.50
Elevated Type:	
1. 8-gallon capacity.....	12.20
4. 10-gallon capacity.....	13.75
4. (Urinal). 6-gallon capacity.....	10.65

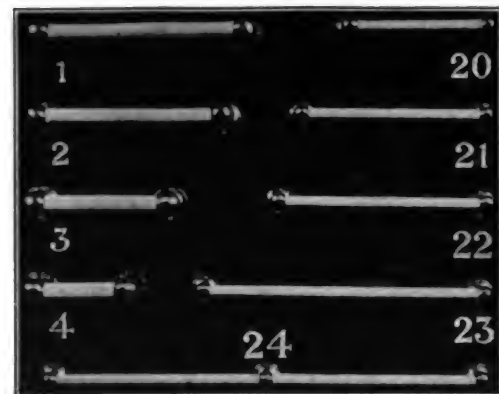
PRICE LIST—W. C. SEATS AND COVERS

Plate Number	Price
110. Oval pattern. Seat and cover.....	\$ 6.00
(1 1/2" stock). Seat only.....	4.75
2. Oval pattern. Seat and cover.....	6.25
(1 1/2" stock). Seat only.....	5.00
60. Semi-saddle pattern. Seat and cover.....	7.00
(1 1/2" stock). Seat only.....	5.75
75. Hand shaped, full saddle pattern. Seat and cover.....	7.25
(1 1/2" stock). Seat only.....	6.00
105. Oval pattern, square back. Seat and cover.....	8.65
(1 1/2" stock). Seat only.....	7.40
30. Sanitary open front pattern. Seat and cover.....	9.10
(1 1/2" stock). Seat only.....	7.85
102. Hand shaped, square backed saddle pattern. Seat and cover.....	12.50
(1 1/2" stock). Seat only.....	11.25
98. Oval shape. Seat and cover.....	11.25
(1 1/2" stock). Seat only.....	10.00
52. Divided sanitary seat, 1 1/2" stock, for raised lip closet bowl.	14.25
48. Divided sanitary seat, 1 1/2" stock, for regular S-J bowl....	12.15

REFERENCES—

BUILDINGS
Prudential Insurance Co. Buildings, Newark, N. J.
Statler Hotel, Cleveland, Ohio
Stamford Hospital, Stamford, Conn.
Pontiac Hotel, Oswego, N. Y.
Statler Hotel, Buffalo, N. Y.
Statler Residence, Buffalo, N. Y.
Woolworth Building, New York, N. Y.
Union Trust Co. Building, Cincinnati, Ohio
4th Avenue Office Building, New York, N. Y.
Munsey Building, Baltimore, Md.
Apartment, 81st St. & 5th Ave., New York, N. Y.
Post Graduate Hospital, New York, N. Y.

ARCHITECTS
Geo. B. Post & Sons
Geo. B. Post & Sons
Geo. B. Post & Sons
Geo. B. Post & Sons
Eisenwein & Johnson
Cass Gilbert
Cass Gilbert
Cass Gilbert
McKim, Mead & White
McKim, Mead & White
McKim, Mead & White



TOWEL RACKS

PRICE LIST.

Bath Tub Hand Rails.	Towel Bars
No. 1 \$3.50	No. 20 \$1.90
No. 2 3.45	No. 21 2.00
No. 3 3.15	No. 22 2.10
No. 4 2.85	No. 23 2.25
"Omala" Finish on Posts, add \$1.00	No. 24 3.45
	"Omala" Finish on Posts, add 75c.

BUILDINGS

Vanderbilt Hotel, New York, N. Y.
Ritz-Carlton, New York, N. Y.
Carlton Hotel, Montreal, Canada
Meadow Brook Hunt Club, Long Island
Grand Central Station, New York, N. Y.
Hotel Arlington, Washington, D. C.
Hotel McAlpin, New York, N. Y.
Hotel Waldorf-Astoria, New York, N. Y.
Hotel Plaza, New York, N. Y.
Hotel Manhattan, New York, N. Y.
Hotel Auditorium, Chicago, Ill.
Hotel Hermitage, Nashville, Tenn.
Fullerton-Weaver Apartments, New York, N. Y.
Allwyn Court Apartments, New York, N. Y.
The Towers Apartments, New York, N. Y.
The Turrets Apartments, New York, N. Y.
And 9 San Francisco City Hospital Buildings

ARCHITECTS

Warren & Wetmore
Warren & Wetmore
Warren & Wetmore
Warren & Wetmore
Warren & Wetmore
F. M. Andrews Co.
F. M. Andrews Co.
H. J. Hardenburg
H. J. Hardenburg
H. J. Hardenburg
Marshall & Fox
T. E. R. Carpenter
T. E. R. Carpenter
Harde & Short
Harde & Short

Established
1873



Searls Manufacturing Co.

Brass Workers and Manufacturers of "Palette" Bathroom Specialties

27 and 29 MULBERRY STREET

NEWARK, N. J.

Incorporated
1884



PRODUCTS—Searls "Palette" Bathroom Specialties, as follows:

TOWEL RACKS, plain, roller and folding; RINGS, PINS, BASKETS; ROBE AND COMBINATION COAT-AND-HAT HOOKS

HOLDERS for Nail Brushes, Soap and Sponges, Tooth Brushes and Tumblers, Brush and Combs, Carafe and Mug, Matches, Whisk Brooms, and Toilet Paper; SOAP CUPS; SEATS AND HAND RAILS for Bath Tubs

PLATE-GLASS WALL SHELVES; MEDICINE CABINETS; FRENCH PLATE MIRRORS

CANDLESTICKS, ASH TRAYS AND CIGAR RESTS, all in regular and special patterns

STYLE AND QUALITY—In designing, we avoid all undue ornamentation and adhere to plain lines. Our goods thereby obtain a rich, solid effect, and can easily be cleaned. We use only solid brass and brass screws, all finely nickel-plated. The patterns are heavy, which means durability. (Iron and steel should not be used, on account of rusting.) Prices for all goods mentioned here are by the single piece.

TOWEL RACKS—We manufacture a complete line of all styles and sizes of stationary, folding, roller and locking Towel Racks, with Brass or Glass Bars.

PLATE GLASS SHELVES—As shown, are made of Crystal Plate or Opal Plate $\frac{1}{4}$ " to $\frac{1}{2}$ " thick, in various lengths and widths, with or without railing around front, towel bar underneath or china soap tray and tumbler combination. All shelves have stationary or adjustable brackets ready to be screwed to wall.

SPONGE AND SOAP HOLDERS—As shown, are made of open-framed basket construction, in various styles and sizes, for walls or rims of bathtubs.

TOILET PAPER HOLDERS—As shown, are made in various styles and sizes, either to recess or hang on face of wall, for flat or rolled sheets of paper and with or without locking attachments.

INSTALLATION OR SETTING—When requested we give estimate to install our goods, with our **guarantee against breakage of tiling**. (This only for buildings within 200 miles of New York City.)

REFERENCES—Among many we give the following list:

Hotel Vanderbilt, New York, N. Y.
The Raleigh, Washington, D. C.
Hotel Strand, Atlantic City, N. J.
Hotel Ponchartrain, Detroit, Mich.
Marquette Hotel, St. Louis, Mo.
Hotel Sinton, Cincinnati, Ohio
French Lick Springs Hotel, French Lick, Ind.
New Vendome Hotel, Evansville, Ind.
New Hoffman House, New York, N. Y.
Leland Hotel, Springfield, Ill.
Postal Hotel, Detroit, Mich.
Julien Hotel, Dubuque, Iowa
Hotel St. Mark, Oakland, Cal.
Fort Pitt Hotel, Pittsburg, Pa.

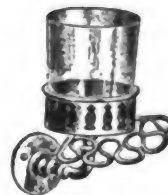
Y. M. C. A. Building, Dayton, Ohio
Casino Mansions Apts., Brooklyn, N. Y.
Schermerhorn Apts., 82nd St. & Madison Ave., New York, N. Y.
Palo Alto & Dunloe Apts., 179th St. & Pinchurst Ave., New York, N. Y.
Altoria & San Leandro Apts., 180th St. & Pinchurst Ave., New York, N. Y.
The Langham Apts., Central Park West & 73rd St., New York, N. Y.
Stratford Court Apts., Stratford Place, Newark, N. J.
Andrews Hotel, Minneapolis, Minn.
Manila Hotel, Manila, P. I.



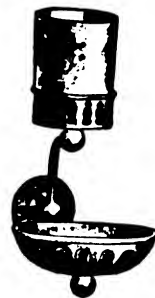
SOAP CUP
No. 3718—6" x 4"—\$.90



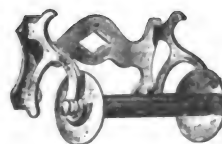
SPONGE HOLDER
No. 3549—7 $\frac{1}{2}$ " dia., 3 $\frac{1}{4}$ " deep—\$1.70



TOOTH BRUSH AND TUMBLER
HOLDER
No. 3684—\$1.00



COMBINATION HOLDER
No. 3683—\$2.60



TOILET PAPER HOLDER
No. 3603—\$1.10



HOOKS
No. 3639—\$.70 No. 3533—\$.45
Nickel-plated brass screws with all wall fixtures



TOWEL RACK NO. 3505— $\frac{1}{2}$ INCH DIA.
15" long.....\$.50 24" long.....\$.80
18" "\$.60 30" "\$.90
21" "\$.70 36" "1.00



TOWEL RACK NO. 3515— $\frac{3}{4}$ INCH DIA.
Crystal glass bar, nickel-plated sockets
18" long.....\$1.50 30" long.....\$1.90
24" "1.70 36" "2.10



FOLDING TOWEL RACK NO. 3501
Wall Plate
No. 3501—3 bars, 5 x 1 in.....\$1.60
No. 3501A—2 " 4 x 1 in.....1.30
No. 3501B—1 " 3 $\frac{1}{2}$ x 1 in.....1.00
Bars 5 16" dia., 14" long

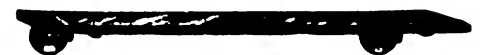


PLATE GLASS SHELF NO. 3745
With adjustable brackets for front only
Crystal plate, $\frac{1}{4}$ " thick Opal plate, $\frac{1}{4}$ " thick
18" long.....\$2.25
24" "2.50 \$3.50
27" "2.65 3.65



HAND RAIL FOR BATH TUB NO. 3757
Bar, 24" long, 1" dia., projects 3"....\$2.30



BATH ROOM MIRROR NO. 3021
Frame $\frac{1}{2}$ " flat, 16 x 20 in.....\$ 8.75
" " 16 x 24 in.....10.50
" " 20 x 30 in.....16.00
With nickel-plated No. 12 brass screws

"A.B.C." SYSTEMS

Woodley Slate Company

Quarriers and Manufacturers

Modern Sanitary Slate Work

BANGOR, PENNA.

Sales Agencies

SAN FRANCISCO, CAL.
DENVER, COLO.
ST. LOUIS, MO.

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CLEVELAND, OHIO
CINCINNATI, OHIO

COLUMBUS, OHIO
PITTSBURGH, PA.
TAMPA, FLA.

NEW YORK, N. Y.
PATERSON, N. J.
BOSTON, MASS.

PRODUCTS—Slate Plumbing Fixtures—"WOODLEY"
SLATE LAUNDRY TUBS, SINKS, SINK TOPS, ACID TANKS,
URINAL STALLS, SHOWER STALLS, URINAL RANGES,
LAVATORIES; PLUMBERS' SLATE WORK

Structural Slate—TREADS, PLATFORMS, FLOOR TILE
AND SLABS, WAINSCOTING, BLACKBOARDS, TABLE TOPS
AND OTHER STRUCTURAL SLATE



ILLUSTRATIONS—The illustrations here given are but a few of the styles of Tubs, Sinks, etc., which we manufacture. The complete list is very extended, covering every size and requirement. We are also prepared to furnish **special designs** or sizes at very short notice.

INTRODUCTION—Slate is known for its qualities of hardness, general durability and non-absorptiveness. It is an ideal **natural** material for sanitary purposes, and is rapidly taking the lead for use in all work where mere **showy** appearance is secondary to sanitation. This is the case in Schools, Institutions, Gymnasiums, Hospitals, Hotels, Sanitariums, Recreation Buildings of Industrial Establishments, etc.

GUARANTEE—We guarantee "Woodley" slate to be acid-proof, non-absorbent, a non-retainer of odor, and more durable and sanitary than soapstone, cement, marble and enameled iron.

Every article manufactured by us bears our **indefinite guarantee label** to the effect that the goods it identifies represent the highest standard of workmanship and material—the policy which has given to "Woodley" goods a National reputation.

PROMPT SHIPMENT—We carry all standard sizes in stock and can ship immediately, complete with all necessary accessories.

SPECIFICATIONS—To prevent substitution specify: The slate fixtures called for in this specification to be "Woodley" slate, and to be furnished by the Woodley Slate Company, Bangor, Pa.



FIG. 1-A—TWO-PART HIGH BACK LAUNDRY TUB



FIG. 2-A—TWO-PART LOW BACK LAUNDRY TUB WITH ASH COVER 48" X 24"



FIG. 3-A—THREE-PART LOW BACK LAUNDRY TUB



FIG. 4-A—KITCHEN SINK WITH HIGH BACK AND R. H. DRAIN BOARD



FIG. 5-A—KITCHEN SINK WITH HIGH BACK, L. H. END AND TWO DRAIN BOARDS



FIG. 6-A—SINK TOP WITH COUNTER-SUNK AND GROOVED DRAIN BOARD 18" LONG ON EACH END OF TOP



FIG. 7-A—SINK TOP WITH COUNTER-SUNK AND GROOVED DRAIN BOARD 24" LONG ON ONE END OF TOP



FIG. 8-A—SPECIAL SINGLE-VENTILATED SLATE URINALS FOR SCHOOLS AND PUBLIC BUILDINGS



FIG. 9-A—NO-PARTITION URINALS FOR SCHOOLS AND PUBLIC BUILDINGS



Back and Base extend slightly over the edges of gutter, compelling all wash and drip to fall directly into it.

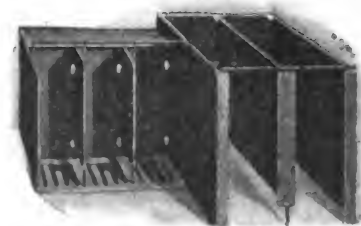


FIG. 10-A—COMBINATION SLATE URINAL AND CLOSET STALLS

Our New General Catalog covering practically Everything in the Slate Line will be promptly mailed on request

"A.B.C." SYSTEMS

Thos. Maddock's Sons Company

Manufacturers of Vitreous China Plumbing Fixtures

TRENTON, NEW JERSEY

PRODUCTS—A complete line of WHITE VITREOUS CHINA SANITARY PLUMBING FIXTURES, AND WHITE CHINA Bathroom and Toilet accessories

PURPOSES—For the equipment of Bathrooms, Toilets, Kitchens, Laundries, Hospitals, Laboratories, etc., etc.

CLASSIFICATION—"MADDOCKS" WHITE VITREOUS CHINA; Lavatories, Manicure Tables, Drinking Fountains, Water Closets, Tanks, Urinals, Sinks, etc., etc., all made of hard fired vitreous white clay body, covered with a vitrified transparent glaze.



"MADDOCKS" WHITE CHINA; Towel Bars; Coat Hooks; Soap Cups, Drinking Mugs, etc., with China Wall Brackets; and other specialties.

The "Anchor" Trade Mark, as shown here, is

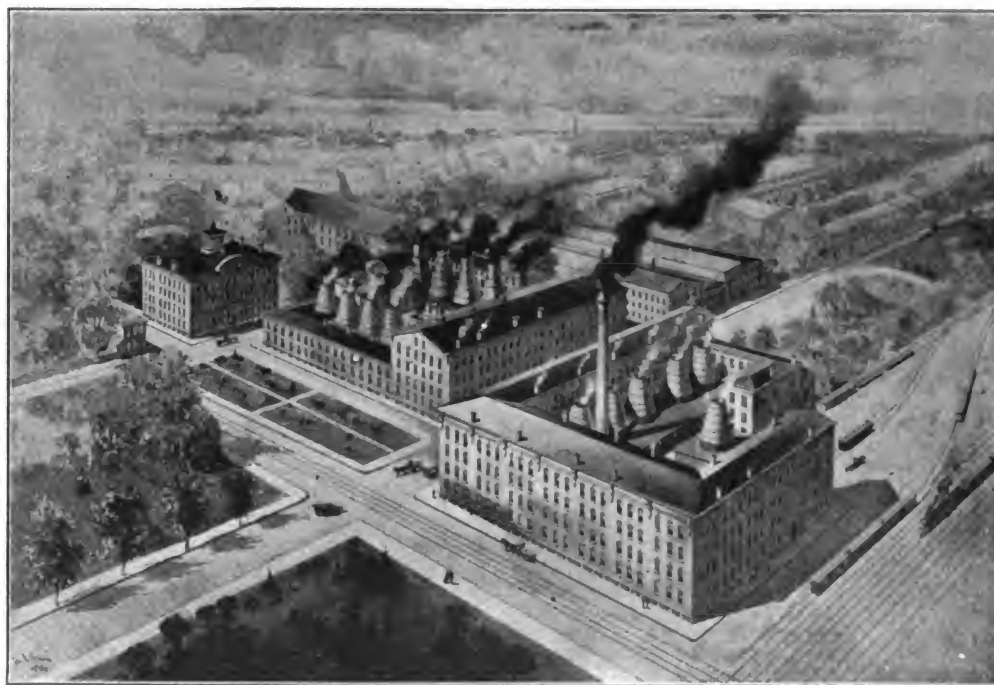
stamped in black on the body under the glaze on every piece of "Maddocks" White Vitreous China Sanitary Ware.

METAL TRIMMINGS—All fixtures shown in this catalog are furnished complete with metal and wood trimmings, or will be furnished without trimmings if so specified.

PRICES—The list prices shown in this catalog are subject to discounts to the Trade. Reputable plumbing supply houses throughout the United States and Canada are prepared to furnish immediate quotations covering all fixtures shown in this catalog.

DISTRIBUTION—"Maddocks" White Vitreous China plumbing fixtures are usually carried in stock by plumbing supply houses. Otherwise goods will be furnished from our extensive warerooms at the factories in Trenton, New Jersey.

Factories
and
General
Offices
Trenton,
New Jersey



The Pioneer
Manufacturers
of Vitreous
China Sanitary
Ware
Kiln Capacity
16 Kilns

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"A.B.C." SYSTEMS

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PLATE 2000-S



PLATE 2003-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front integral supply lavatory, plate 2000-S; size 28" x 22", with vitreous china pedestal. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob and escutcheon, and compression supply valves with solid china cross-arm handles and china escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab.....	28" x 22"
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$73.50
Lavatory Slab only, no fittings.....	30.00
Pedestal only.....	11.00

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2003-S; size 28" x 22", with vitreous china pedestal. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob and compression supply valves with solid china cross-arm handles and china escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab.....	28" x 22"
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$69.00
Lavatory Slab only, no fittings.....	25.50
Pedestal only.....	11.00



PLATE 2007-S



PLATE 2005-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2007-S; size (see below), with vitreous china fluted pedestal. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob and compression supply valves with solid china cross-arm handles and china escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS			
Lavatory Slab	26" x 22"	30" x 24"	33" x 24"
Bowl	16 1/2" x 12 1/2" x 6"	18 1/2" x 13 1/2" x 6"	18 1/2" x 13 1/2" x 6"
LIST PRICES			
Complete as specified.....	\$64.50	\$72.50	\$82.50
Lavatory Slab only, no fittings	21.00	29.00	39.00
Pedestal only	11.00	11.00	11.00

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2005-S; size (see below), with vitreous china fluted pedestal. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob and compression supply valves with solid china cross-arm handles and china escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS		
Lavatory Slab	30" x 24"	33" x 24"
Bowl	18 1/2" x 13 1/2" x 6"	18 1/2" x 13 1/2" x 6"
LIST PRICES		
Complete as specified.....	\$72.50	\$82.50
Lavatory Slab only, no fittings.....	29.00	39.00
Pedestal only,	11.00	11.00



PLATE 2009-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2009-S; size (see below), with vitreous china fluted pedestal. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob and Fuller supply valves with china handles and metal escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " waste trap to wall.

DIMENSIONS			
Lavatory Slab	26" x 22"	30" x 24"	33" x 24"
Bowl	16 $\frac{1}{2}$ " x 12 $\frac{1}{2}$ " x 6"	18 $\frac{1}{2}$ " x 13 $\frac{1}{2}$ " x 6"	18 $\frac{1}{2}$ " x 13 $\frac{1}{2}$ " x 6"
LIST PRICES			
Complete as specified.....	\$64.50	\$72.50	\$82.50
Lavatory Slab only, no fittings	21.00	29.00	39.00
Pedestal only	11.00	11.00	11.00



PLATE 2013-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2013-S; size (see below), with vitreous china pedestal. Fitted with nickel-plated brass standing waste fixture with china waste knob and nickel-plated brass Fuller faucets with china handles; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " waste trap to wall.

DIMENSIONS			
Lavatory Slab	26" x 22"	30" x 24"	33" x 24"
Bowl	16 $\frac{1}{2}$ " x 12 $\frac{1}{2}$ " x 6"	18 $\frac{1}{2}$ " x 13 $\frac{1}{2}$ " x 6"	18 $\frac{1}{2}$ " x 13 $\frac{1}{2}$ " x 6"
LIST PRICES			
Complete as specified.....	\$51.50	\$59.50	\$69.50
Lavatory Slab only, no fittings	21.00	29.00	39.00
Pedestal only	11.00	11.00	11.00



PLATE 2011-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2011-S; size (see below), with vitreous china fluted pedestal. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob, Fuller supply valves with china handles and escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " waste trap to wall.

DIMENSIONS			
Lavatory Slab	26" x 22"	30" x 24"	33" x 24"
Bowl	16 $\frac{1}{2}$ " x 12 $\frac{1}{2}$ " x 6"	18 $\frac{1}{2}$ " x 13 $\frac{1}{2}$ " x 6"	18 $\frac{1}{2}$ " x 13 $\frac{1}{2}$ " x 6"
LIST PRICES			
Complete as specified.....	\$64.50	\$72.50	\$82.50
Lavatory Slab only, no fittings	21.00	29.00	39.00
Pedestal only	11.00	11.00	11.00

"A.B.C." SYSTEMS



PLATE 2030-S

HOW TO SPECIFY—"Maddocks" White vitreous china barber lavatory, plate 2030-S; size 27" x 22", with hooded overflow and vitreous china pedestal. Fitted with nickel-plated brass pop-up waste with china waste knob, nickel-plated brass combination shampoo fixture with mixing chamber, nickel-plated brass Fuller faucets with china handles and china indexes. Mixing valve with china handle, shampoo valve with china-tipped compression handle, nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " waste trap to wall.

DIMENSIONS	
Lavatory Slab	27" x 22"
Bowl	16 $\frac{1}{2}$ " x 12 $\frac{1}{2}$ " x 6"
LIST PRICES	
Complete as specified	\$110.35
Lavatory Slab only, no fittings	28.35
Pedestal only	11.00

Continued on next page



PLATE 2019-S

HOW TO SPECIFY—"Maddocks" White vitreous china oval lavatory, plate 2019-S; size (see below), with vitreous china swelled pedestal. Fitted with nickel-plated brass combination lift waste fixture with china waste knob, compression handles and china escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS			
Lavatory Slab	30" x 24"	33" x 24"	
Bowl	18 1/2" x 13 1/2" x 6"	18 1/2" x 13 1/2" x 6"	
LIST PRICES			
Complete as specified.....	\$70.50	\$80.50	
Lavatory Slab only, no fittings.....	29.00	39.00	
Pedestal only.....	11.00	11.00	



PLATE 2015-S

HOW TO SPECIFY—"Maddocks" White vitreous china oval lavatory, plate 2015-S; size (see below), with vitreous china plain round pedestal. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob, compression supply valves with solid china cross-arm handles and china escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" trap to wall.

DIMENSIONS			
Lavatory Slab	30" x 24"	33" x 24"	
Bowl	18 1/2" x 13 1/2" x 6"	18 1/2" x 13 1/2" x 6"	
LIST PRICES			
Complete as specified.....	\$72.50	\$82.50	
Lavatory Slab only, no fittings.....	29.00	39.00	
Pedestal only	11.00	11.00	



PLATE 2017-S

HOW TO SPECIFY—"Maddocks" White vitreous china oval lavatory, plate 2017-S; size 26" x 22", with vitreous china fluted pedestal. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob, nickel-plated brass Fuller supply valves with china handles and china escutcheons; nickel-plated brass supply pipes to wall, and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS			
Lavatory Slab	26" x 22"		
Bowl	16 1/2" x 12 1/2" x 6"		
LIST PRICES			
Complete as specified.....	\$64.50		
Lavatory Slab only, no fittings.....	21.00		
Pedestal only.....	11.00		



PLATE 2021-S

HOW TO SPECIFY—"Maddocks" White vitreous china oval lavatory, plate 2021-S; size 26" x 22", with 4" integral back and vitreous china fluted pedestal. Fitted with nickel-plated brass standing waste fixture with china waste knob, nickel-plated brass Fuller faucets with china handles; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS			
Lavatory Slab	26" x 22"		
Integral Back	4" high		
Bowl	16 1/2" x 12 1/2" x 6"		
LIST PRICES			
Complete as specified.....	\$58.50		
Lavatory Slab only, no fittings.....	28.00		
Pedestal only	11.00		



PLATE 2103-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2103-S; size (see below), with vitreous china legs. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob, nickel-plated brass Fuller supply valves with china handles and china escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	26" x 22"	30" x 24"	33" x 24"
Lavatory Slab	26" x 22"	30" x 24"	33" x 24"
Bowl	16 1/2" x 12 1/2" x 6"	18 1/2" x 13 1/2" x 6"	18 1/2" x 13 1/2" x 6"
LIST PRICES			
Complete as specified.....	\$61.50	\$69.50	\$79.50
Lavatory Slab only, no fittings	21.00	29.00	39.00
Vitreous Legs with Rods, per pair.....	8.00	8.00	8.00



PLATE 2100-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2100-S; size (see below), with vitreous china legs. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob, Fuller supply valves with nickel-plated escutcheons and china handles; nickel-plated brass supply pipes to floor and nickel-plated 1 1/4" brass waste trap to floor.

DIMENSIONS	26" x 22"	30" x 24"	33" x 24"
Lavatory Slab	26" x 22"	30" x 24"	33" x 24"
Bowl	16 1/2" x 12 1/2" x 6"	18 1/2" x 13 1/2" x 6"	18 1/2" x 13 1/2" x 6"
LIST PRICES			
Complete as specified....	\$58.00	\$66.00	\$76.00
Lavatory Slab only, no fittings	21.00	29.00	39.00
Vitreous Legs with Rods, per pair.....	8.00	8.00	8.00



PLATE 2105-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2105-S; size 30" x 24", with hooded overflow, 6" integral back and vitreous china legs. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheons, nickel-plated brass Fuller faucets with china handles and china indexes; nickel-plated brass supply pipes to floor and nickel-plated 1 1/4" brass waste trap to floor.

DIMENSIONS	30" x 24"
Lavatory Slab	30" x 24"
Integral Back	6" high
Bowl	18 1/2" x 13 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$82.85
Lavatory Slab only, no fittings.....	53.35
Vitreous Legs with Rods, per pair.....	8.00

"A.B.C." SYSTEMS



PLATE 2107-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front hospital lavatory, plate 2107-S; size 38" x 26", with vitreous china legs. Fitted with nickel-plated brass faucet for hot and cold water; with nickel-plated brass supply pipe to floor, with nickel-plated brass pedal valves, nickel-plated 1 1/4" brass vented waste trap to wall and pedal waste control.

DIMENSIONS	38" x 26"
Lavatory Slab	38" x 26"
Bowl	18" x 13" x 6"
LIST PRICES	
Complete as specified.....	\$124.50
Lavatory Slab only, no fittings.....	65.50
Vitreous Legs with Rods, per pair.....	8.00

Continued on next page



PLATE 2210-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2210-S; size 26" x 22", with vitreous china leg. Fitted with nickel-plated brass combination pop-up waste fixture with china waste knob, compression supply valves with solid china cross-arm handles and china escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS

Lavatory Slab.....	26" x 22"
Bowl	16 1/2" x 12 1/2" x 6"

LIST PRICES

Complete as specified.....	\$60.50
Lavatory Slab only, no fittings.....	21.00
Vitreous Leg with Rod.....	7.00

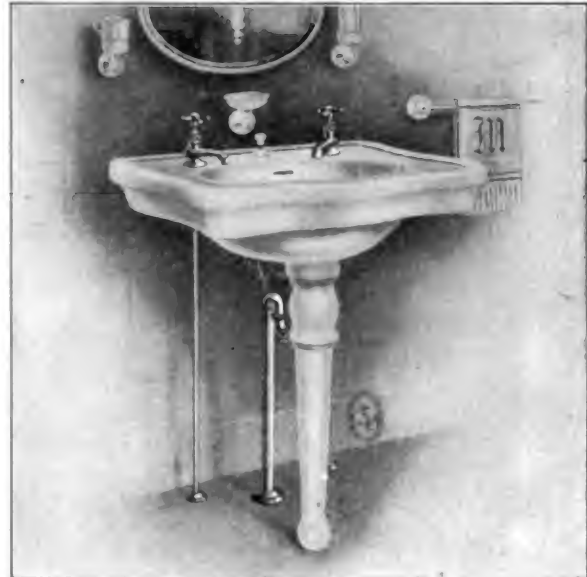


PLATE 2212-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2212-S; size (see below), with vitreous china leg. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with china indexes; nickel-plated brass supply pipes to floor and nickel-plated brass 1 1/4" waste trap to floor.

DIMENSIONS

Lavatory Slab	24" x 20"	26" x 22"
Bowl	16 1/2" x 12 1/2" x 6"	16 1/2" x 12 1/2" x 6"

LIST PRICES

Complete as specified.....	\$39.00	\$44.00
Lavatory Slab only, no fittings.....	16.00	21.00
Vitreous Leg with Rod.....	4.00	4.00



PLATE 2200-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2200-S; size 24" x 20", with vitreous china leg. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with solid china cross-arm handles; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS

Lavatory Slab.....	24" x 20"
Bowl	16 1/2" x 12 1/2" x 6"

LIST PRICES

Complete as specified.....	\$42.00
Lavatory Slab only, no fittings.....	16.00
Vitreous Leg with Rod.....	4.00

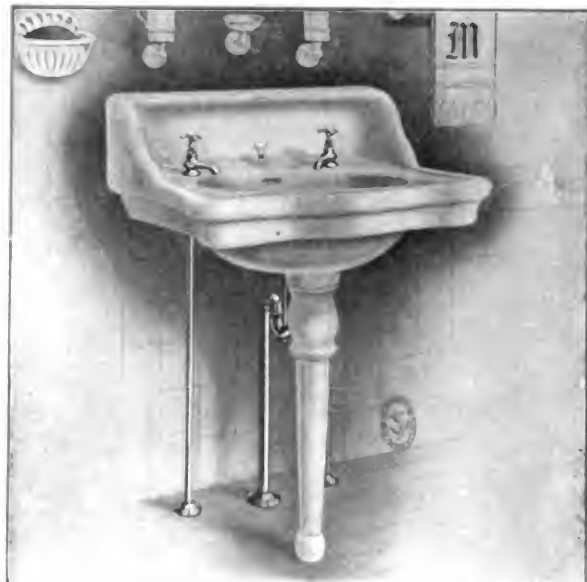


PLATE 2216-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2216-S; size (see below), with integral 6" back, integral shelf 4" front to back, and vitreous china leg. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets, with china indexes; nickel-plated brass supply pipes to floor and nickel-plated brass 1 1/4" waste trap to floor.

DIMENSIONS

Lavatory Slab.....	24" x 22"	26" x 22"
Bowl	16 1/2" x 12 1/2" x 6"	16 1/2" x 12 1/2" x 6"

LIST PRICES

Complete as specified.....	\$50.00	\$58.25
Lavatory Slab only, no fittings.....	26.50	34.75
Vitreous Leg with Rod.....	4.00	4.00



PLATE 2214-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2214-S; size (see below), with 6" integral back and vitreous china leg. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass Fuller faucets with china handles and china indexes; nickel-plated brass supply pipes to floor and nickel-plated brass $1\frac{1}{4}$ " waste trap to floor.

DIMENSIONS		
Lavatory Slab	24" x 20"	26" x 22"
Back	6" high	6" high
Bowl	16½" x 12½" x 6"	16½" x 12½" x 6"
LIST PRICES		
Complete as specified.....	\$47.50	\$53.50
Lavatory Slab only, no fittings.....	22.00	28.00
Vitreous Leg with Rod.....	4.00	4.00



PLATE 2207-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2207-S; size 24" x 20", with 6" integral back and vitreous china leg. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with china indexes; nickel-plated brass supply pipes to floor and nickel-plated brass $1\frac{1}{4}$ " waste trap to floor.

DIMENSIONS		
Lavatory Slab	24" x 20"	
Back	6" high	
Bowl	16½" x 12½" x 6"	
LIST PRICES		
Complete as specified.....	\$44.00	
Lavatory Slab only, no fittings.....	22.00	
Vitreous Leg with Rod.....	4.00	



PLATE 2205-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2205-S; size 24" x 20", with 6" integral back and vitreous china leg. Fitted with nickel-plated brass combination fixture having Fuller supply valves with china handles, nickel-plated brass escutcheons, nickel-plated brass chain and plugs; nickel-plated brass supply pipes to wall and nickel-plated brass $1\frac{1}{4}$ " waste trap to wall.

DIMENSIONS		
Lavatory Slab	24" x 20"	
Back	6" high	
Bowl	16½" x 12½" x 6"	
LIST PRICES		
Complete as specified.....	\$44.50	
Lavatory Slab only, no fittings.....	22.00	
Vitreous Leg with Rod.....	4.00	



PLATE 2203-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2203-S; size 24" x 20", with 6" integral back and vitreous china leg. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass Fuller faucets with china handles and china indexes; nickel-plated brass supply pipes to floor and nickel-plated brass $1\frac{1}{4}$ " waste trap to floor.

DIMENSIONS		
Lavatory Slab	24" x 20"	
Back	6" high	
Bowl	16½" x 12½" x 6"	
LIST PRICES		
Complete as specified.....	\$47.50	
Lavatory Slab only, no fittings.....	22.00	
Vitreous Leg with Rod.....	4.00	



PLATE 2220-S



PLATE 2218-S



HOW TO SPECIFY—"Maddocks" White vitreous china round front lavatory, plate 2220-S; size 24" x 20", with 6" integral back and vitreous china leg. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass Fuller faucets with china handles and china indexes; nickel-plated brass supply pipes to floor and nickel-plated brass 1/4" waste trap to floor.

DIMENSIONS	
Lavatory Slab.....	24" x 20"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$47.50
Lavatory Slab only, no fittings.....	22.00
Vitreous Leg with Rod.....	4.00

HOW TO SPECIFY—"Maddocks" White vitreous china round front lavatory, plate 2218-S; size 24" x 20", with 8" integral back and vitreous china leg. Fitted with nickel-plated brass standing waste fixture with china waste knob, nickel-plated brass Fuller faucets with china handles and china indexes; nickel-plated brass supply pipes to floor and nickel-plated brass 1/4" waste trap to floor.

DIMENSIONS	
Lavatory Slab	24" x 20"
Back	8" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$53.00
Lavatory Slab only, no fittings.....	29.00
Vitreous Leg with Rod.....	4.00



PLATE 2222-S



PLATE 2224-S



HOW TO SPECIFY—"Maddocks" White vitreous china straight front angle lavatory, plate 2222-S; size (see below), with 6" integral back, 6" integral end and vitreous china leg. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with china indexes; nickel-plated brass supply pipes to wall, nickel-plated brass 1/4" waste trap to wall.

NOTE—Plate 2222-S can be furnished for either right- or left-hand corner. Specify clearly which corner is desired.

DIMENSIONS	
Lavatory Slab.....	24" x 20"
Back and end.....	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$65.15
Lavatory Slab only, no fittings.....	43.65
Vitreous Leg with Rod.....	4.00

HOW TO SPECIFY—"Maddocks" White vitreous china corner lavatory, plate 2224-S; size 24" x 24", with 6" integral back and vitreous china leg. Fitted with nickel-plated brass standing waste fixture with china waste knob, nickel-plated brass Fuller faucets with china handles and china indexes; nickel-plated brass supply pipes to wall and nickel-plated brass 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	24" x 24" along sides
Back	6" high
Bowl	18 1/2" x 13 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$66.50
Lavatory Slab only, no fittings.....	43.00
Vitreous Leg with Rod.....	4.00



PLATE 2402-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2402-S; size 24" x 20", with 6" integral back and concealed hangers. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with china indexes; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	24" x 20"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$40.00
Lavatory Slab with concealed hangers only, no fittings.....	22.00



PLATE 2407-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2407-S; size 20" x 18", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with china indexes; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab.....	20" x 18"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as Specified.....	\$31.00
Lavatory Slab, with concealed hangers only, no fittings.....	13.00



PLATE 2405-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2405-S; size 20" x 18", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass combination fixture with Fuller supply valves, with china handles and nickel-plated brass escutcheon; nickel-plated brass chain and plug, nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab.....	20" x 18"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified.....	\$30.50
Lavatory Slab, with concealed hangers only, no fittings.....	13.00

"A.B.C." SYSTEMS

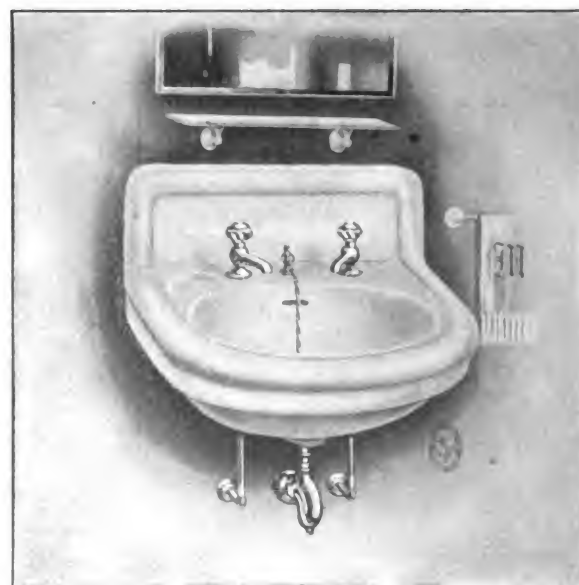


PLATE 2417-S

HOW TO SPECIFY—"Maddocks" White vitreous china round front lavatory, plate 2417-S; size 18" x 16", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass self-closing faucets with china indexes, nickel-plated brass outlet plug, chain stay and chain; nickel-plated brass supply pipes to wall and nickel-plated brass 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab.....	18" x 16"
Back	6" high
Bowl	14 1/2" x 11 1/2" x 6"
LIST PRICES	
Complete as Specified.....	\$27.00
Lavatory Slab, with concealed hangers only, no fittings.....	11.00

Continued on next page



PLATE 2409-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2409-S; size 20" x 19", with 8" integral back and concealed wall hangers. Fitted with nickel-plated brass pop-up waste fixture with nickel-plated handle and escutcheon, nickel-plated brass Fuller faucets with china handles and china indexes; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	20" x 19"
Back	8" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified	\$38.00
Lavatory Slab, with concealed hangers only, no fittings	19.00



PLATE 2411-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front integral china supply lavatory, plate 2411-S; size 20" x 19", with 8" integral back and concealed wall hangers. Fitted with combination fixture with compression supply valves with solid china cross-arm handles and china escutcheons, concealed chain stay with chain and plug; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

NOTE—No brass work is exposed upon the slab of this special lavatory, everything exposed is pure white china.

DIMENSIONS	
Lavatory Slab	20" x 19"
Back	8" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as Specified	\$44.00
Lavatory Slab, with integral supply only	22.50



PLATE 2415-S

HOW TO SPECIFY—"Maddocks" White vitreous china round front lavatory, plate 2415-S; size 20" x 18", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass combination fixture with compression supply valves with nickel-plated brass cross-arm handles and china indexes, nickel-plated brass chain and plug; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" vented waste trap to wall.

DIMENSIONS	
Lavatory Slab	20" x 18"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified	\$31.50
Lavatory Slab, with concealed hangers only, no fittings	13.00



PLATE 2413-S

HOW TO SPECIFY—"Maddocks" White vitreous china round front lavatory, plate 2413-S; size 24" x 20", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and china escutcheon, nickel-plated brass Fuller faucets; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	24" x 20"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified	\$40.00
Lavatory Slab, with concealed hangers only, no fittings	22.00



PLATE 2402-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2402-S; size 24" x 20", with 6" integral back and concealed hangers. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with china indexes; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	24" x 20"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"

LIST PRICES	
Complete as specified	\$40.00
Lavatory Slab with concealed hangers only, no fittings	22.00

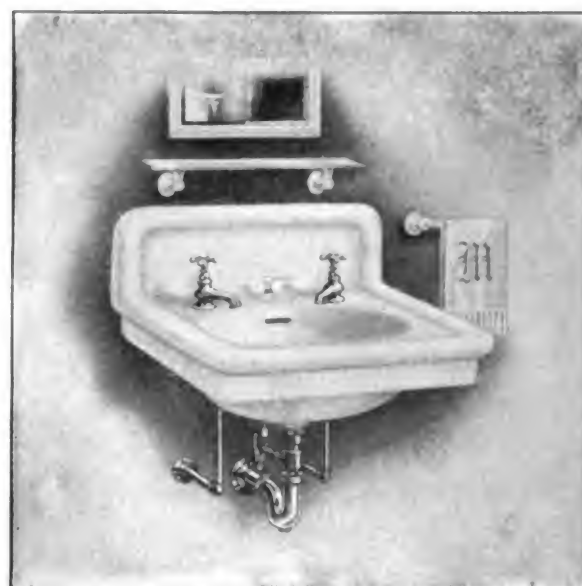


PLATE 2407-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2407-S; size 20" x 18", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with china indexes; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	20" x 18"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"

LIST PRICES	
Complete as Specified	\$31.00
Lavatory Slab, with concealed hangers only, no fittings	13.00



PLATE 2405-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front lavatory, plate 2405-S; size 20" x 18", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass combination fixture with Fuller supply valves, with china handles and nickel-plated brass escutcheon; nickel-plated brass chain and plug, nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	20" x 18"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"

LIST PRICES	
Complete as specified	\$30.50
Lavatory Slab, with concealed hangers only, no fittings	13.00

"A.E.C." SYSTEMS

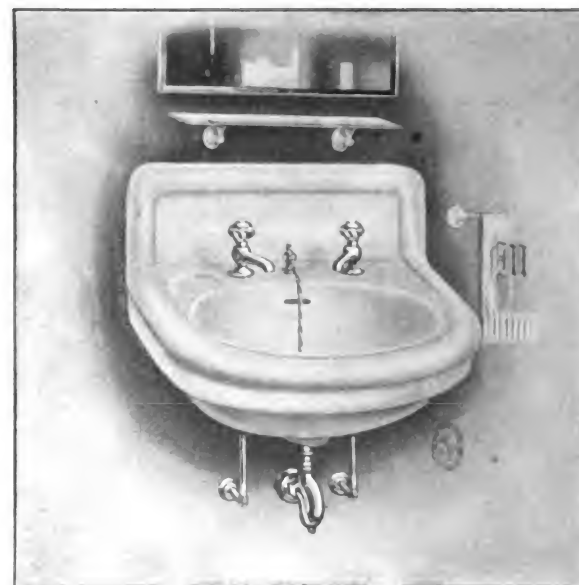


PLATE 2417-S

HOW TO SPECIFY—"Maddocks" White vitreous china round front lavatory, plate 2417-S; size 18" x 16", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass self-closing faucets with china indexes, nickel-plated brass outlet plug, chain stay and chain; nickel-plated brass supply pipes to wall and nickel-plated brass 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	18" x 16"
Back	6" high
Bowl	14 1/2" x 11 1/2" x 6"

LIST PRICES	
Complete as Specified	\$27.00
Lavatory Slab, with concealed hangers only, no fittings	11.00

Continued on next page



PLATE 2409-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front lavatory, plate 2409-S; size 20" x 19", with 8" integral back and concealed wall hangers. Fitted with nickel-plated brass pop-up waste fixture with nickel-plated handle and escutcheon, nickel-plated brass Fuller faucets with china handles and china indexes; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	20" x 19"
Back	8" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified	\$38.00
Lavatory Slab, with concealed hangers only, no fittings	19.00



PLATE 2411-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front integral china supply lavatory, plate 2411-S; size 20" x 19", with 8" integral back and concealed wall hangers. Fitted with combination fixture with compression supply valves with solid china cross-arm handles and china escutcheons, concealed chain stay with chain and plug; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

NOTE—No brass work is exposed upon the slab of this special lavatory, everything exposed is pure white china.

DIMENSIONS	
Lavatory Slab	20" x 19"
Back	8" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as Specified	\$44.00
Lavatory Slab, with integral supply only	22.50



PLATE 2415-S

HOW TO SPECIFY—"Maddocks" White vitreous china round front lavatory, plate 2415-S; size 20" x 18", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass combination fixture with compression supply valves with nickel-plated brass cross-arm handles and china indexes, nickel-plated brass chain and plug; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" vented waste trap to wall.

DIMENSIONS	
Lavatory Slab	20" x 18"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified	\$31.50
Lavatory Slab, with concealed hangers only, no fittings	13.00



PLATE 2413-S

HOW TO SPECIFY—"Maddocks" White vitreous china round front lavatory, plate 2413-S; size 24" x 20", with 6" integral back and concealed wall hangers. Fitted with nickel-plated brass pop-up waste fixture with china waste knob and china escutcheon, nickel-plated brass Fuller faucets; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Lavatory Slab	24" x 20"
Back	6" high
Bowl	16 1/2" x 12 1/2" x 6"
LIST PRICES	
Complete as specified	\$40.00
Lavatory Slab, with concealed hangers only, no fittings	22.00



PLATE 2421-S

HOW TO SPECIFY—"Maddocks" White Vitreous china corner lavatory, plate 2421-S; size (see below), with 6" integral back. Fitted with concealed iron wall supports, nickel-plated brass pop-up waste fixture with china waste knob and escutcheon, nickel-plated brass compression faucets with solid china cross-arm handles; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS		
Lavatory Slab, along sides.....	16 1/4" x 16 1/4"	19 1/4" x 19 1/4"
Back	6" high	6" high
Bowl	14 1/2" x 11 1/2" x 6"	14 1/2" x 11 1/2" x 6"
LIST PRICES		
Complete as specified.....	\$38.00	\$49.00
Lavatory Slab only, no fittings.....	16.00	27.00



PLATE 2423-S

HOW TO SPECIFY—"Maddocks" White vitreous china corner prison lavatory, plate 2423-S; size 13" x 13", with 6" integral back. Fitted with nickel-plated brass compression faucet with china index and rubber stopper for outlet.
NOTE—Outlet can be made either to right or left. Specify clearly which is desired.

DIMENSIONS		
Lavatory Slab, along sides.....	13" x 13"	
Back	6" high	
Bowl	14 1/2" x 11 1/2" x 6"	
LIST PRICES		
Complete as specified.....		\$15.10
Lavatory Slab only, no fittings.....		13.00

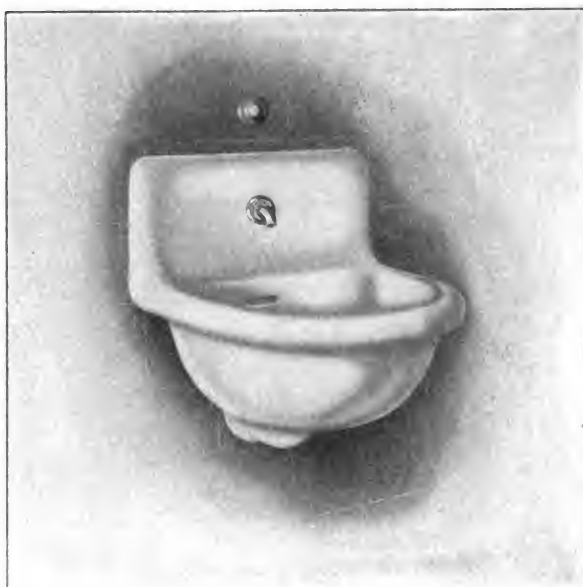


PLATE 2419-S

HOW TO SPECIFY—"Maddocks" White vitreous china prison lavatory, plate 2419-S; size 14" x 14", with 6" integral back. Fitted with nickel-plated brass push-button faucet with china index and rubber stopper for outlet.

DIMENSIONS		
Lavatory Slab.....	14" x 14"	
Back	6" high	
Bowl	11" x 11" x 6"	

LIST PRICE	
Complete as specified.....	\$15.00

"A.B.C." SYSTEMS

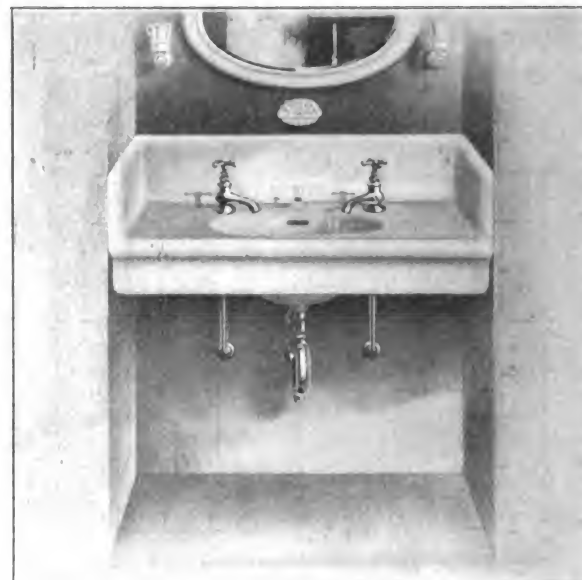


PLATE 2400-S

HOW TO SPECIFY—"Maddocks" White vitreous china recessed lavatory, plate 2400-S; size 26" x 20", with 6" integral back, 6" integral ends. Fitted with concealed iron supports, nickel-plated brass pop-up waste fixture with china waste knob and escutcheons, nickel-plated brass compression faucets with china indexes; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS		
Lavatory Slab.....	26" x 20"	
Back	6" high	
Bowl	16 1/2" x 12 1/2" x 6"	

LIST PRICES	
Complete as specified.....	\$72.50
Lavatory Slab only, no fittings.....	53.00

Continued on next page



PLATE 2302-S

HOW TO SPECIFY—"Maddocks" White vitreous china manicuring table, plate 2302-S; size 32" x 18", with center bowl, integral china supply, hooded overflow and vitreous china leg. Fitted with nickel-plated brass combination pop-up waste fixture with four-arm solid china handle, compression supply valves with four-arm solid china handle; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Top of Table.....	32" x 18"
Center Bowl.....	diameter 6"; depth 4"
LIST PRICES	
Complete as specified.....	\$92.10
Table only, no fittings.....	40.00
Vitreous Leg with Rod.....	3.60



PLATE 2306-S

HOW TO SPECIFY—"Maddocks" White vitreous china toilet table with manicuring bowl, plate 2306-S; size 32" x 18", supported by nickel-plated brass wall brackets. Fitted with nickel-plated brass combination waste fixture with china waste knob, compression supply valves, with four-arm china handles and nickel-plated brass escutcheons; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Top of Table.....	32" x 18"
Manicure Bowl.....	diameter 6"; depth 4"
LIST PRICES	
Complete as specified.....	\$64.50
Table only, no fittings.....	30.00
Table with wall brackets only.....	37.00



PLATE 2304-S

HOW TO SPECIFY—"Maddocks" White vitreous china manicuring table, plate 2304-S; size 32" x 18", with end bowl, on vitreous china leg. Fitted with nickel-plated brass combination fixture, with china waste knob and compression supply valves, with four-arm china-tipped handles; nickel-plated brass supply pipes to wall and nickel-plated brass 1 1/4" waste trap to wall.

DIMENSIONS	
Top of Table.....	32" x 18"
Bowl.....	diameter 6"; depth 4"
LIST PRICE	
Complete as specified.....	\$61.10
Table only, no fittings.....	30.00
Vitreous Leg with Rod.....	3.60



PLATE 2308-S

HOW TO SPECIFY—"Maddocks" White vitreous china dressing table, plate 2308-S; size 32" x 18", with vitreous china pedestal.

DIMENSIONS	
Top of Table.....	32" x 18"
Top of table to floor.....	31"
LIST PRICE	
Table and Pedestal complete.....	\$40.00



PLATE 2802-S

HOW TO SPECIFY—"Maddocks" White vitreous china pedestal drinking fountain, plate 2802-S. Fitted with concealed supply and waste fixtures inside pedestal and operated by pedal valve on floor and nickel-plated brass bubbling cup.

DIMENSIONS	
Height of Pedestal.....	30"
Diameter of Base.....	15"
Diameter of Top.....	10½"
LIST PRICES	
Complete as specified.....	\$50.00
Pedestal Fountain only, no fittings.....	18.00



PLATE 2800-S

HOW TO SPECIFY—"Maddocks" White vitreous china pedestal drinking fountain, plate 2800-S. Fitted with concealed supply and waste fixtures inside pedestal and vitreous china bubbling cup.

DIMENSIONS	
Height of Pedestal.....	30"
Diameter of Base.....	15"
Diameter of Top.....	10½"
LIST PRICES	
Complete as specified.....	\$32.50
Pedestal Fountain only, no fittings.....	18.00



PLATE 2801-S

HOW TO SPECIFY—"Maddocks" White vitreous china pedestal drinking fountain, plate 2801-S. Fitted with concealed supply and waste fixtures inside pedestal, with self-closing nickel-plated brass ring around vitreous china drinking bulb.

DIMENSIONS	
Height of Pedestal.....	30"
Diameter of Base.....	15"
Diameter of Top.....	10½"
LIST PRICES	
Complete as specified.....	\$33.00
Pedestal Fountain only, no fittings.....	18.00

"A.E.C." SYSTEMS



PLATE 2803-S

HOW TO SPECIFY—"Maddocks" White vitreous china drinking fountain, plate 2803-S; 13½" in diameter, set on galvanized iron standard fitted with nickel-plated brass spout for continuous flow, with supply and waste pipes coming up through iron standard.

NOTE—This fountain can also be furnished with a self-closing faucet operating from the side.

DIMENSIONS	
Diameter.....	13½"
Top to floor.....	30½"
Diameter of base of iron standard.....	14"
LIST PRICES	
Complete as specified.....	\$35.20
Vitreous Fountain Bowl only, no fittings.....	7.20

Continued on next page



PLATE 2808-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front drinking fountain, plate 2808-S; size 18" x 14", with integral back. Supported by concealed hangers and fitted with vitreous china bubbling cup, enameled iron trap and nickel-plated brass supply pipe with loose key stop.

DIMENSIONS

Length along wall.....	18"
Wall to front over all.....	14"
Top of back to bottom on wall.....	13"

LIST PRICES

Complete as specified.....	\$54.52
Drinking Fountain only, no fittings.....	36.00
Vitreous Bubbling Cup.....	2.52



PLATE 2807-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front drinking fountain, plate 2807-S; size 24" x 14", with integral back. Supported by concealed hangers and fitted with two (2) vitreous china bubbling cups, nickel-plated brass supply pipes to wall with loose key-angle stop valves and nickel-plated brass waste trap to wall.

DIMENSIONS

Length along wall.....	24"
Wall to front of fountain over all.....	14"
Top of back to bottom of fountain on wall.....	15"

LIST PRICES

Complete as specified.....	\$58.04
Fountain only, no fittings.....	40.00
Two Vitreous Bubbling Cups.....	5.04



PLATE 2811-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front drinking fountain, plate 2811-S; size 20 1/2" x 10 1/2", with integral china cup trays and integral back. Supported by concealed hangers and fitted with nickel-plated brass self-closing rabbit-ear faucets, nickel-plated brass waste strainer and coupling, and nickel-plated brass 1/4" waste trap to wall.

NOTE—This fountain can also be furnished cut for single faucet. It can also be furnished with integral china waste trap.

DIMENSIONS

Length along wall.....	20 1/2"
Wall to front over all.....	10"
Top of back to bottom of fountain on wall.....	13 1/2"

LIST PRICES

Complete as specified.....	\$29.80
Drinking Fountain only, no fittings or strainer.....	19.80

"A.B.C." SYSTEMS

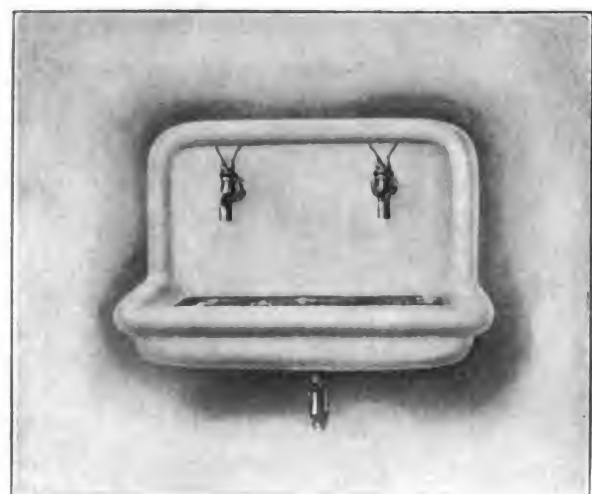


PLATE 2810-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front drinking fountain, plate 2810-S; size 20 1/2" x 10 1/2", with integral back. Supported by concealed hangers and fitted with nickel-plated brass self-closing rabbit-ear faucets, nickel-plated brass waste strainer and coupling, and nickel-plated brass 1/4" waste trap to wall. **NOTE**—This fountain can also be furnished cut for single faucet. It can also be furnished with integral china waste trap.

DIMENSIONS

Length along wall.....	20 1/2"
Wall to front over all.....	10"
Top of back to bottom of fountain on wall.....	13 1/2"

LIST PRICES

Complete as specified.....	\$28.00
Drinking Fountain only, no fittings or strainer.....	18.00

Continued on next page



"Maddocks" Bubbling Cups for Drinking Fountains.

These china and nickel-plated Brass Bubbling Cups are interchangeable and may be used with the following Drinking Fountains: Plates 2800-S, 2801-S, 2802-S, 2803-S, 2807-S, 2808-S, 2809-S.

Prices range from \$3.00 to \$6.00 each.



PLATE 2813-S

HOW TO SPECIFY—"Maddocks" White vitreous china recessed drinking fountain, plate 2813-S; size 15" high. Fitted with nickel-plated brass self-closing faucet with china index and nickel-plated brass waste strainer.

DIMENSIONS

Height over all	15"
Width over all	12"
Extreme front of fountain to extreme back.....	5 1/4"
Projection from wall	3"

LIST PRICES

Complete as specified.....	\$19.40
Drinking Fountain only.....	14.00



PLATE 2812-S

HOW TO SPECIFY—"Maddocks" White vitreous china drinking fountain, plate 2812-S; size 20" high, with integral vitreous china trap. Fitted with nickel-plated brass self-closing faucet and nickel-plated brass waste strainer with cast brass trap connection and washer.

NOTE.—This fountain can also be furnished for nickel-plated brass waste trap.

DIMENSIONS

Height on wall	20"
Width on wall	12"
Projection wall to front	8"

LIST PRICES

Complete as specified	\$19.60
Fountain with integral china trap only, no fittings.....	14.00

"A.B.C." SYSTEMS



PLATE 2809-S

HOW TO SPECIFY—"Maddocks" White vitreous china wall pattern drinking fountain, plate 2809-S, with vitreous china bubbling cup. Supported by concealed hangers.

NOTE.—Fixture is adapted to factory use. The supply and waste fittings may be connected from below.

DIMENSIONS

Diameter of Bowl	10 1/4"
Wall to front of bowl over all.....	12"
Top to bottom on wall.....	10 1/4"

LIST PRICES

Complete as specified	\$12.52
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Continued on next page



PLATE 3000-S

HOW TO SPECIFY—"Maddocks" White vitreous china plain syphon jet closet, in combination with swelled front, vitreous china low pattern flushing tank, plate 3000-S. Tank supplied by nickel-plated brass supply pipe from floor with compression control valve. Tank fitted with brass flushing fittings operated by lever with china handle. Straight flush pipe from tank to closet of nickel-plated brass. Closet equipped with mahogany-finish seat and lid with nickel-plated brass hinges.

NOTE—This closet is of recent design, and is especially adapted to conditions where close roughing-in is desired.

DIMENSIONS

For tank dimensions, see Plate 3100-S.

For roughing-in measurements of closet, see page 23.

LIST PRICE

Complete as specified..... \$36.50

NOTE—Price includes necessary crating for shipment.



PLATE 3005-S

HOW TO SPECIFY—"Maddocks" White vitreous plain reversed trap syphon acting washdown closet, in combination with straight front vitreous china low-pattern flushing tank, plate 3005-S. Tank supplied by nickel-plated brass supply pipe from floor. Tank fitted with brass flushing fittings operated by lever with china handle. Flush pipe from tank to closet of nickel-plated brass. Closet equipped with golden oak seat and lid with nickel-plated brass hinges.

DIMENSIONS

For tank dimensions, see Plate 3100-S.

For roughing-in measurements of closet, see page 23.

LIST PRICE

Complete as specified..... \$30.80

NOTE—Price includes necessary crating for shipment.



PLATE 3008-S

HOW TO SPECIFY—"Maddocks" White vitreous china "Ariston" syphon jet closet, in combination with swelled-front vitreous china low-pattern flushing tank, plate 3008-S. Tank supplied by nickel-plated brass supply pipe from floor and fitted with brass flushing fittings operated by china-handled lever at top. Closet equipped with mahogany-finish saddle seat with nickel-plated brass hinges.

DIMENSIONS

For tank dimensions, see Plate 3100-S.

For roughing-in measurements of closet, see page 23.

LIST PRICE

Complete as specified..... \$35.00

NOTE—Price includes necessary crating for shipment.



HOW TO SPECIFY—"Maddocks" White vitreous china plain syphon jet closet, in combination with vitreous china high-pattern flushing tank, plate 3009-S. Tank with top-supply, nickel-plated brass flush pipe to closet, nickel-plated brass pull chain with china handle and nickel-plated brass wall guide. Tank fitted with brass flushing fittings of approved type. Closet equipped with mahogany-finish seat and lid with nickel-plated brass hinges.

DIMENSIONS

Tank, over all.....14½"x10"x8½"

For roughing-in of closet, see page 23.

LIST PRICE

Complete as specified..... \$38.60

NOTE—Price includes necessary crating for shipment.

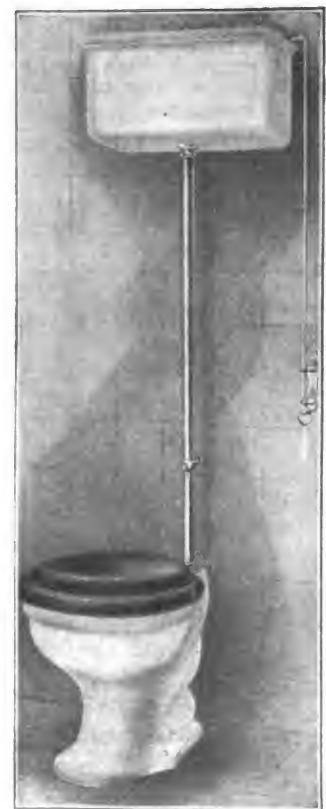


PLATE 3009-S

"A.B.C." SYSTEMS

Continued on next page



PLATE 3100-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front low pattern tank, plate 3100-S. Fitted with elevated compound lever ball cock, which seats with leather washer above water; Douglass pattern valve with seamless standpipe; nickel-plated brass double-action operating lever with china handle, operating either up or down; nickel-plated brass $\frac{3}{8}$ " iron-pipe size seamless supply and nickel-plated brass flush connection.

DIMENSIONS

Tank over all.....21" x 16 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ "

LIST PRICES

Complete as specified.....\$20.00
Tank only, no fittings.....11.00

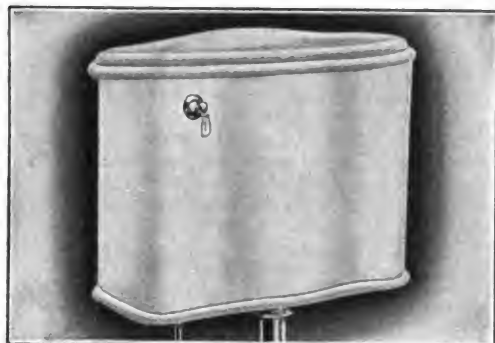


PLATE 3106-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front low pattern tank, plate 3106-S. Fitted with elevated compound lever ball cock, which seats with leather washer above water; Douglass pattern valve with seamless standpipe; nickel-plated brass operating lever with china handle which operates to right or left; nickel-plated brass $\frac{3}{8}$ " iron-pipe size seamless supply and nickel-plated brass flush connection.

DIMENSIONS

Tank over all.....22 $\frac{1}{2}$ " x 18 $\frac{1}{2}$ " x 8 $\frac{1}{4}$ "

LIST PRICES

Complete as specified.....\$18.00
Tank only, no fittings.....11.00

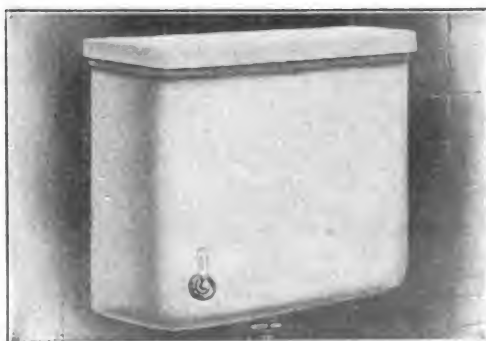


PLATE 3102-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front low pattern tank, plate 3102-S; with integral channel in corner inside. Fitted with elevated compound lever ball cock, which seats with leather washer above water; Douglass pattern valve with seamless standpipe; nickel-plated brass operating lever with china handle which operates to right or left; nickel-plated brass $\frac{3}{8}$ " iron-pipe size seamless supply and nickel-plated brass flush connection.

DIMENSIONS

Tank over all.....21 $\frac{1}{2}$ " x 17" x 9"

LIST PRICES

Complete as specified.....\$20.00
Tank only, no fittings.....12.00

"A.R.C." SYSTEMS



PLATE 3104-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front low pattern tank, plate 3104-S. Fitted with elevated compound lever ball cock, which seats with leather washer above water; Douglass pattern valve with seamless standpipe, nickel-plated brass operating lever with china handle, operating either up or down; nickel-plated brass $\frac{3}{8}$ " iron-pipe size seamless supply and nickel-plated brass flush connection.

DIMENSIONS

Tank over all.....22 $\frac{1}{2}$ " x 18 $\frac{1}{2}$ " x 8 $\frac{1}{4}$ "

LIST PRICES

Complete as specified.....\$20.00
Tank only, no fittings.....11.00



PLATE 3108-S

HOW TO SPECIFY—"Maddocks" White vitreous china swelled front low pattern tank, plate 3108-S, with integral channel in corner inside. Fitted with elevated compound lever ball cock, which seats with leather washer above water; Douglass pattern valve with seamless standpipe; nickel-plated brass operating lever with china handle which operates to right or left; nickel-plated brass $\frac{3}{8}$ " iron-pipe size seamless supply and nickel-plated brass flush connection.

DIMENSIONS

Tank over all.....20" x 18" x 9"

LIST PRICES

Complete as specified.....\$20.00
Tank only, no fittings.....12.00



PLATE 3115-S

HOW TO SPECIFY—"Maddocks" White vitreous china straight front urinal tank, plate 3115-S, with capacity of (see below) gallons. Fitted with automatic brass flush valve.

NOTE—This tank is made for either top or bottom supply valve. Specify clearly which is desired.

CAPACITY	2 gallon	4 gallon	5 gallon	8 gallon
DIMENSIONS				
Tank over all.....	14 $\frac{1}{2}$ "x10 $\frac{3}{4}$ "x6"	15 $\frac{1}{4}$ "x12"x8"	19"x10 $\frac{3}{4}$ "x10"	24"x12 $\frac{1}{2}$ "x12 $\frac{1}{2}$ "
LIST PRICES				
Complete as specified....	\$16.00	\$21.00	\$22.00	\$29.00
Tank only, no fittings.....	7.00	11.00	12.00	18.00

Continued on next page



PLATE 2901-S

HOW TO SPECIFY—"Maddocks" White vitreous china lipped front "Ariston" syphon jet closet, plate 2901-S. (Specify clearly here whether closet is to be used with high or low tank.)

NOTE—The rim of this closet is cut out at the back as well as being lipped at the front, making it exceptionally free from dangers of collecting soil, dropping of urine to floor, etc. The water surface is extremely large and trap is deeply sealed with water.

DIMENSIONS

Height over all..... 14½"
Outside width of rim..... 14"
For roughing-in measurement of closet, see page 23

LIST PRICE

Closet only..... \$25.00



PLATE 2900-S

HOW TO SPECIFY—"Maddocks" White vitreous china lipped front syphon jet closet, plate 2900-S, with bottom jet. (Specify clearly here whether closet is to be used with high or low tank.)

NOTE—This closet has a large water surface and deep seal. May be used with either low-pattern or high-pattern tank. The particular feature of this closet is that urine cannot reach the floor through the opening between closet rim and seat.

DIMENSIONS

Height over all..... 15"
Outside width of rim of bowl..... 14"
For roughing-in measurement of closet, see page 23

LIST PRICE

Closet only..... \$19.90



PLATE 2903-S

HOW TO SPECIFY—"Maddocks" White vitreous china squared back syphon jet closet, plate 2903-S, with bottom jet. (State clearly here whether closet is to be used with high or low tank.)

NOTE—This closet has large water surface and deep seal.

DIMENSIONS

Height over all..... 15½"
Outside width of rim..... 15"
For roughing-in measurement of closet, see page 23

LIST PRICE

Closet only..... \$22.00



PLATE 2906-S

HOW TO SPECIFY—"Maddocks" White vitreous china plain syphon jet closet, plate 2906-S. (State clearly here whether closet is to be used with high or low tank.)

NOTE—This closet works quietly and with efficiency and has large water surface and deep seal.

DIMENSIONS

Height over all..... 15"
Outside width of rim..... 13½"
For roughing-in measurement of closet, see page 23

LIST PRICE

Closet only..... \$17.00



PLATE 2918-S

HOW TO SPECIFY—"Maddocks" White vitreous china back inlet plain syphon jet closet, plate 2918-S, with bottom jet. (Specify here clearly whether closet is to be used with high or low tank.)

NOTE—This closet is so constructed as to rough in as closely as top supply closet. This closet is of particular advantage when set in a tiled floor in combination with a low tank, as it allows the plumber ample leeway to install.

DIMENSIONS

Height of closet.....	15"
Outside width of rim.....	13½"
For roughing-in measurement of closet, see page 23	

LIST PRICE

Closet only.....	\$17.70
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PLATE 2921-S

HOW TO SPECIFY—"Maddocks" White vitreous china plain syphon jet closet, plate 2921-S, with bottom jet. (Specify here clearly whether closet is to be used for high or low tank.)

NOTE—This closet has large water surface and deep seal and is constructed to comply with the United States Government specifications of Types B-1 and B-2 closets.

DIMENSIONS

Height of closet.....	15"
Outside width of rim.....	13½"
For roughing-in measurement of closet, see page 23	

LIST PRICE

Closet only.....	\$13.50
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PLATE 2923-S

HOW TO SPECIFY—"Maddocks" White vitreous china extra-heavy syphon jet closet, plate 2923-S, for high tank.

NOTE—(Not made for low tank). This closet has large water surface, large opening through the trap; deep seal; and is constructed to comply with the United States Government specifications of Type B-3 closet.

DIMENSIONS

Height.....	17"
Outside width of rim.....	16"
For roughing-in measurement of closet, see page 23	

LIST PRICE

Closet only.....	\$38.25
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"A.E.C." SYSTEMS



PLATE 2909-S

HOW TO SPECIFY—"Maddocks" White vitreous china syphon jet closet, plate 2909-S, with extended inlet and drain screw. (Specify here clearly whether closet is to be used for high or low tank.)

NOTE—By loosening the drain screw all water in this closet can be removed, consequently it is especially valuable in buildings which are unoccupied during the winter months. This closet is extensively used in school buildings.

DIMENSIONS

Height.....	15"
Outside width of rim.....	14"
For roughing-in measurement of closet, see page 23	

LIST PRICE

Closet with drain-screw.....	\$21.60
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Continued on next page



PLATE 2929-S

HOW TO SPECIFY—"Maddocks" White vitreous china syphon jet juvenile closet, plate 2929-S; 10" high, for high tank.

NOTE—This closet is especially made for children, assuring a natural and healthy position of the body when using it.

DIMENSIONS

Height 10"
Outside width of rim 9 1/2"
For roughing-in measurement of closet, see page 23

LIST PRICE

Closet only \$17.00



PLATE 2926-S

HOW TO SPECIFY—"Maddocks" White vitreous china syphon jet juvenile closet, plate 2926-S; 13" high, with bottom jet. (Specify here clearly whether closet is to be used for high or low tank.)

NOTE—This closet has large water surface and deep seal and by reason of its height is in great demand for general use.

DIMENSIONS

Height 13"
Outside width of rim 13"
For roughing-in measurement of closet, see page 23

LIST PRICE

Closet only \$17.00



PLATE 2912-S

HOW TO SPECIFY—"Maddocks" White vitreous china syphon jet juvenile closet, plate 2912-S, with bottom jet, back inlet and wall outlet. (Specify here clearly whether closet is to be used for high or low tank.)

NOTE—This closet can be also furnished: (A)—With top supply and wall outlet. (B)—With back inlet and floor outlet. All patterns have large water surface and deep seal.

DIMENSIONS

Height 15"
Outside width of rim 13 1/2"
For roughing-in measurement of closet, see page 23

LIST PRICE

Closet only \$19.20

"A.B.C." SYSTEMS



PLATE 2915-S

HOW TO SPECIFY—"Maddocks" White vitreous china syphon jet prison closet, plate 2915-S, with wall flange, integral china seat, bottom jet, back inlet (1 1/2" spud) and floor outlet.

NOTE—This closet can also be furnished with seat attachment and regular rim to be used with wooden seat. This closet has large water surface and deep seal.

DIMENSIONS

Height 16"
Outside width of rim 14"
Back of closet to front of rim 23 1/2"
For roughing-in measurement of closet, see page 23

LIST PRICE

Closet only \$21.60

Continued on next page



PLATE 2932-S

HOW TO SPECIFY—"Maddocks" White vitreous china syphon jet juvenile closet, plate 2932-S; 13" high, with integral raised rear vent.

NOTE—This closet has large water surface and deep seal and is especially adapted to school buildings.

DIMENSIONS

Height	13"
Outside width of rim	13½"
For roughing-in measurement of closet, see page 23	

LIST PRICE

Closet, including integral vent	\$27.65
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PLATE 2953-S

HOW TO SPECIFY—"Maddocks" White vitreous china extra-heavy hopper and trap combined, plate 2953-S; with integral china seat.

NOTE—This closet has extra-large opening through the trap and is so constructed as to stand the extra-hard wear of factory usage. This closet can also be furnished with seat attachment for wooden seat.

DIMENSIONS

Height	16½"
Back of rim to front of rim	16½"
Outside width of rim	15½"

LIST PRICES

Closet only as shown	\$14.30
Closet with seat attachment (for wooden seat)	12.30



PLATE 2951-S

HOW TO SPECIFY—"Maddocks" White vitreous china extra-heavy angle flanged, back inlet, wall outlet, syphon acting washdown closet, plate 2951-S.

NOTE—This closet works equally well with either flushing tank or flush valve. It is used particularly in prison work and can also be furnished with integral china seat.

DIMENSIONS

Height	15"
Wall to extreme front	20"
Outside width of rim	13¾"

LIST PRICES

Closet only as shown	\$20.52
Closet with integral china seat	20.22

"A.B.C." SYSTEMS



PLATE 2825-S

HOW TO SPECIFY—"Maddocks" White vitreous china Bidet closet, plate 2825-S; with flush rim. Fitted with nickel-plated brass combination supply and waste fixtures, as shown with china indexes on valves and waste.

DIMENSIONS

Height	15½"
Front to back over all	24"
Width	15"

LIST PRICES

Complete as specified	\$32.00
Bidet closet only	16.20

Continued on next page



PLATE 2940-S

HOW TO SPECIFY—"Maddocks" White vitreous china reversed trap syphon action washdown closet, with jet, plate 2940-S.

NOTE—This closet has very large water surface and deep seal.

DIMENSIONS

Height 15"
 Outside width of rim 13½"

LIST PRICE

Closet only \$12.50



PLATE 2943-S

HOW TO SPECIFY—"Maddocks" White vitreous china reversed trap syphon action washdown closet, plate 2943-S. (Specify here clearly whether closet is to be used for high or low tank.)

NOTE—This closet has large water surface and deep seal.

DIMENSIONS

Height 15"
 Outside width of rim 13½"

LIST PRICE

Closet only \$10.00



PLATE 2946-S

HOW TO SPECIFY—"Maddocks" White vitreous china syphon action washdown closet, plate 2946-S; with jet under rim at back of bowl. (Known as non-soiling rim closet.) (Specify here clearly whether closet desired is for high or low tank.)

NOTE—This closet has large water surface, deep seal and full opening throughout trap.

DIMENSIONS

Height 15"
 Outside width of rim 14"

LIST PRICE

Closet only \$8.50



PLATE 2956-S

HOW TO SPECIFY—"Maddocks" White vitreous china hopper and trap combined, plate 2956-S; for high tank only.

NOTE—This closet has extra-large opening throughout trap and is especially adapted to installations where coarse paper and similar substances must be taken care of.

DIMENSIONS

Height 17"
 Outside width of rim 14"

LIST PRICE

Closet only \$6.75

COMPLETE ROUGHING-IN MEASUREMENTS COVERING VITREOUS CHINA WATERCLOSETS

These measurements will be found of great value in determining the use of fixtures; especially where sizes of walls and rooms are settled, or where alteration work is being done and it is desirable to place old-fashioned closets with the modern, improved fixtures, as illustrated in this Catalog.

PLATE 2900-S—PAGE 18

Height of closet.....	15½"
Center inlet to center outlet.....	8½"
Center inlet to center seat attachment.....	5"
Center inlet to front of rim.....	18¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	14"

PLATE 2901-S—PAGE 18

Height of closet.....	14½"
Center inlet to center outlet.....	8"
Center inlet to center seat attachment.....	6"
Center of seat attachment to front of rim.....	19"
Center to center of seat attachment.....	5½"
Outside width of rim.....	14½"

PLATE 2903-S—PAGE 18

Height of closet.....	15½"
Center inlet to center outlet.....	9"
Center inlet to center seat attachment.....	4½"
Center of seat attachment to front of rim.....	18¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	15"

PLATE 2906-S—PAGE 18

Height of closet.....	15"
Center inlet to center outlet.....	8½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"

PLATE 2909-S—PAGE 19

Height of closet.....	15"
Center inlet to center outlet.....	6½"
Center inlet to center seat attachment.....	5½"
Center of seat attachment to front of rim.....	17"
Center to center of seat attachment.....	5½"
Outside width of rim.....	14"

PLATE 2912-S—PAGE 20

Height of closet.....	15"
Center inlet to center outlet.....	9½"
Center of outlet to floor.....	3½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"

PLATE 2915-S—PAGE 20

Height of closet.....	16"
Center inlet to center outlet.....	9¾"
Center of outlet to floor.....	4¼"
Wall to front of rim.....	23½"
Outside width of rim.....	14"

PLATE 2918-S—PAGE 19

Height of closet.....	15"
Center of outlet to face of inlet.....	½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"

PLATE 2921-S—PAGE 19

Height of closet.....	15"
Center inlet to center outlet.....	8"
Center inlet to center seat attachment.....	4½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"

PLATE 2923-S—PAGE 19

Height of closet.....	17"
Center inlet to center outlet.....	11½"
Center inlet to center seat attachment.....	5½"
Center of seat attachment to front of rim.....	19"
Center to center of seat attachment.....	7"
Outside width of rim.....	16"

PLATE 2926-S—PAGE 20

Height of closet.....	13"
Center inlet to center outlet.....	7"
Center inlet to center seat attachment.....	3¾"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13"

PLATE 2929-S—PAGE 20

Height of closet.....	10"
Center inlet to center outlet.....	2"
Center inlet to center seat attachment.....	5"
Center of seat attachment to front of rim.....	12"
Center to center of seat attachment.....	5½"
Outside width of rim.....	9¾"

PLATE 2932-S—PAGE 21

Height of closet.....	13"
Center inlet to center outlet.....	7¾"
Center inlet to face of vent.....	4"
Center of vent to floor.....	15½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"

PLATE 2940-S—PAGE 22

Height of closet.....	15"
Center of outlet to face of inlet.....	3½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"

PLATE 2943-S—PAGE 22

Height of closet.....	15"
Center of outlet to face of inlet.....	3½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"

PLATE 2946-S—PAGE 22

Height of closet.....	15"
Center of outlet to face of inlet.....	5"
Center of seat attachment to front of rim.....	16"
Center to center of seat attachment.....	5½"
Outside width of rim.....	14"

PLATE 2951-S—PAGE 21

Height of closet.....	15"
Center inlet to center outlet.....	6"
Center of outlet to floor.....	7½"
Wall to front of rim.....	20"
Outside width of rim.....	13¾"

PLATE 2953-S—PAGE 21

Height of closet.....	16½"
Center of outlet to face of inlet.....	10"
Back of rim to front of rim.....	16½"
Outside width of rim.....	15½"

PLATE 2956-S—PAGE 22

Height of closet.....	17"
Center of outlet to face of inlet.....	11"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	14"

PLATE 300-S—PAGE 16

Height of closet.....	15"
Center inlet to center outlet.....	8½"
Center inlet to center seat attachment.....	4½"
Center inlet to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	14"

PLATE 3005-S—PAGE 16

Height of closet.....	15"
Center of outlet to face of inlet.....	3½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"

PLATE 3008-S—PAGE 16

Height of closet.....	14½"
Center inlet to center outlet.....	8"
Center inlet to center seat attachment.....	6"
Center of seat attachment to front of rim.....	19"
Center to center of seat attachment.....	5½"
Outside width of rim.....	14"

PLATE 3009-S—PAGE 16

Height of closet.....	15"
Center inlet to center outlet.....	8½"
Center of seat attachment to front of rim.....	16¾"
Center to center of seat attachment.....	5½"
Outside width of rim.....	13¾"



PLATE 3200-S

HOW TO SPECIFY—"Maddocks" White vitreous china, No. 1 flat back syphon jet lipped urinal, plate 3200-S; with flushing rim, top inlet, and bottom outlet. Fitted with brass inlet and outlet spuds.

NOTE—This urinal has large water surface and deep seal.

DIMENSIONS

Top of inlet spuds to bottom of outlet spud.....	25"
Width on wall.....	14"
Wall to front of lip.....	14"
Diameter of supply.....	1 1/4"
Diameter of outlet.....	1 1/2"

LIST PRICES

Complete as specified.....	\$15.60
Urinal only.....	14.50



PLATE 3202-S

HOW TO SPECIFY—"Maddocks" White vitreous china flat back No. 1 syphon jet lipped urinal, plate 3202-S; with flushing rim, back inlet and back outlet. Fitted with brass inlet and outlet spuds.

NOTE—This urinal has a large water surface and deep seal.

DIMENSIONS

Top to bottom over all	26"
Width on wall	14 1/2"
Wall to front of lip.....	14"
Center of inlet to center of outlet.....	22"
Diameter of supply.....	1 1/4"
Diameter of outlet.....	1 1/2"

LIST PRICES

Complete as specified.....	\$15.60
Urinal only	14.50



PLATE 3206-S

HOW TO SPECIFY—"Maddocks" White vitreous china flat back lipped urinal, plate 3206-S; size (see below), with flushing rim, back inlet and back outlet. Fitted with brass inlet and outlet spuds.



PLATE 3210-S

DIMENSIONS	No. 1 size	No. 2 size
Top to bottom over all	24"	23"
Width on wall.....	14 1/2"	14"
Wall to front of lip.....	14"	13"
Center of inlet to center of outlet.....	20"	19"
Diameter of supply.....	1 1/4"	1"
Diameter of outlet.....	2"	1 1/2"

LIST PRICE

Complete as specified	\$10.00	\$8.00
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HOW TO SPECIFY—"Maddocks" White vitreous china syphon jet pedestal urinal, plate 3210-S.

DIMENSIONS

Floor to top of lip.....	25"
Floor to top of back.....	29"
Center of inlet to floor.....	27"
Center of outlet to face of spud...	11"

LIST PRICE

Complete as specified	\$25.00
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PLATE 3208-S

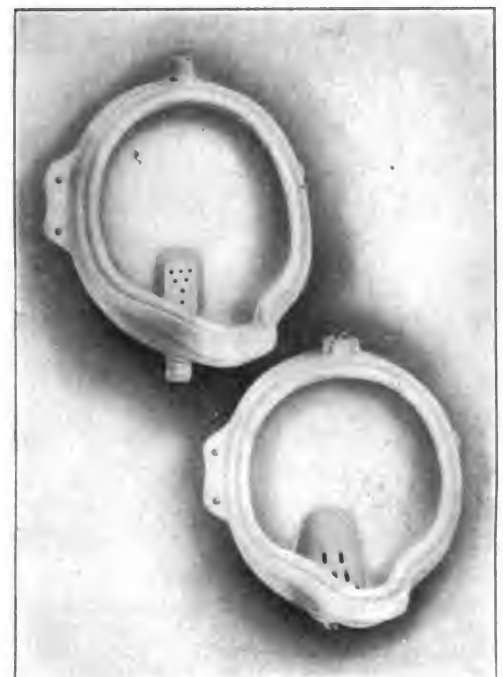
HOW TO SPECIFY—"Maddocks" White vitreous china flat back lipped No. 1 urinal, plate 3208-S; with flushing rim top inlet and bottom outlet.

DIMENSIONS

Top to bottom over all	21"
Width on wall.....	17"
Wall to front of lip.....	14 1/2"

LIST PRICE

Urinal only.....	\$10.00
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PLATES 3208-S and 3209-S

PLATE 3209-S

DIMENSIONS

Top of inlet to bottom of outlet.....	18"
Width on wall.....	17"
Wall to front of lip.....	14 1/2"
Diameter of supply.....	1 1/4"
Diameter of outlet.....	1 1/2"

LIST PRICE

Complete as specified	\$13.06
Urinal only, no spuds	11.90

HOW TO SPECIFY—"Maddocks" White vitreous china flat back lipped urinal, plate 3209-S; with flushing rim, top inlet and bottom outlet. Fitted with nickel-plated brass inlet and outlet spuds.

NOTE—This urinal conforms to the United States Government specifications of type F-3 urinal.

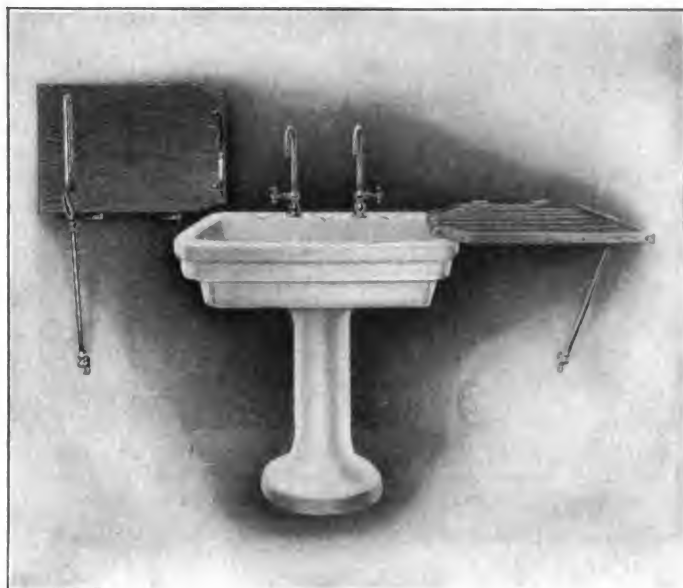


PLATE 3300-S

HOW TO SPECIFY—"Maddocks" White Vitreous China Roll Rim Pantry Sink, plate 3300-S; size 30" x 24", with three integral soap dishes on rim, on plain round vitreous china pedestal. Sink fitted with nickel-plated brass china indexed compression pantry sink faucets and two swinging wooden drain boards with nickel-plated brass adjustable wall supports and back hinges, less supply pipes and waste trap.

DIMENSIONS	
Sink	30"x24"
Depth inside	7"
Top to floor	31"

LIST PRICES	
Complete as specified	\$97.00
Sink and Pedestal only	61.00



PLATE 3302-S

HOW TO SPECIFY—"Maddocks" white vitreous china roll rim kitchen sink, plate 3302-S; size 30" x 22", with 10-inch integral back and vitreous china legs. Fitted with nickel-plated brass compression faucets, nickel-plated brass outlet plug and nickel-plated brass 1/4" waste trap to wall.

DIMENSIONS	
Width on wall	30"
Wall to front, over all	22"
Integral back, height	10"
Inside depth of sink	7"

LIST PRICES	
Complete as specified	\$80.20
Sink only, no fittings	60.00
Two Vitreous Legs with rods	7.20



PLATE 3308-S

HOW TO SPECIFY—"Maddocks" white vitreous china slop sink, plate 3308-S; size 22" x 18", with 12-inch integral back, set upon vitreous china trap with floor outlet and clean-out plug. Sink fitted with nickel-plated brass compression faucets with china indexes, nickel-plated brass outlet plug and coupling.

DIMENSIONS	
Width along wall	22"
Wall to front, over all	18"
Integral back, height	12"
Depth inside	10"
Top of back to floor	37"

LIST PRICES	
Complete as specified	\$70.70
Sink only, no fittings	50.00
Vitreous Pedestal Trap with clean-out plug only	10.70



PLATE 3310-S

HOW TO SPECIFY—"Maddocks" white vitreous china slop sink, plate 3310-S; size 22" x 18", with 12-inch integral back set upon vitreous china trap with wall outlet and clean-out plug. Sink fitted with nickel-plated brass compression faucets with china indexes, nickel-plated brass outlet plug and coupling.

DIMENSIONS	
Width along wall	22"
Wall to front, over all	18"
Integral back, height	12"
Depth inside	10"
Top of back to floor	37"

LIST PRICES	
Complete as specified	\$71.70
Sink only, no fittings	50.00
Vitreous Pedestal Trap with clean-out plug only	11.70



PLATE 3316-S

HOW TO SPECIFY—"Maddocks" White vitreous china roll-rim slop sink, plate 3316-S; size 22" x 18", with vitreous china pedestal trap. Fitted with nickel-plated brass compression faucets with china indexes and nickel-plated brass waste plug and coupling.

DIMENSIONS	
Width along wall.....	22"
Front to back over all.....	18"
Top to floor.....	25"
Depth inside.....	10"
LIST PRICES	
Complete as specified.....	\$58.90
Slop sink only, no fittings.....	36.90
Vitreous Pedestal Trap only.....	10.00



PLATE 3312-S

HOW TO SPECIFY—"Maddocks" White vitreous china syphon jet slop sink, plate 3312-S; size (see below), with top supply, integral trap and bottom outlet. Fitted with nickel-plated brass automatic self-closing flushing valve with china indexes.
NOTE—This sink can also be furnished with regular high-pattern flushing tank.

DIMENSIONS	
Outside measurements of bowl.....	18" x 18" 21" x 21"
LIST PRICES	
Complete as specified.....	\$53.50 \$62.50
Slop Sink only, no fittings.....	36.00 45.00



PLATE 3314-S

HOW TO SPECIFY—"Maddocks" White vitreous china flushing rim clinic slop sink, plate 3314-S; set upon enameled iron vented trap, with clean-out plug.

NOTE—This sink is made for supply from flushing tank and also is cut for supply pipe from the floor for jet.

NOTE—This sink can also be furnished with vitreous china trap.

DIMENSIONS	
Width over all.....	22 1/4"
Front to back over all.....	17 1/4"
Top to floor.....	25"
Depth inside.....	10 3/4"
LIST PRICES	
Complete as specified.....	\$50.70
Complete, with Vitreous Trap.....	49.70



PLATE 3318-S

HOW TO SPECIFY—"Maddocks" White vitreous china flushing rim slop sink, plate 3318-S; size 22" x 22", upon enameled iron vented trap with clean-out plug. Fitted with nickel-plated brass combination flushing fittings and combination fittings for drawing water, with nickel-plated brass supply pipes from floor; all with compression faucets with china indexes and with nickel-plated brass sink plug and coupling.

NOTE—This sink can also be furnished with vitreous china trap.

DIMENSIONS	
Sink.....	22" x 22"
Depth inside.....	12"
LIST PRICES	
Complete as specified.....	\$123.60
Complete, with Vitreous Trap.....	122.60

"MADDOCKS" WHITE CHINA BATHROOM AND TOILET ACCESSORIES



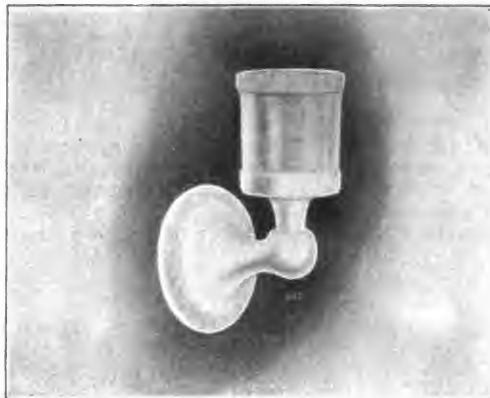
No. 648
 White China Mug Holder and Mug, \$3.00



No. 649
 White China Vase Holder and Vase, \$3.00



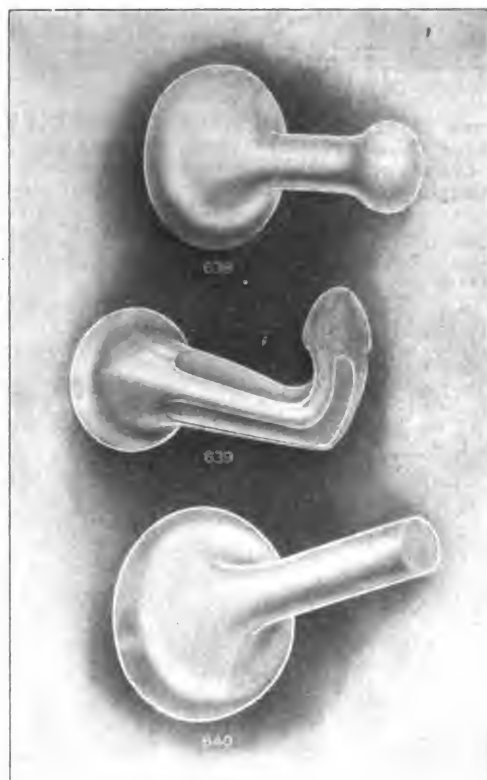
No. 650
 White China Soap Holder with Soap Cup, \$3.00



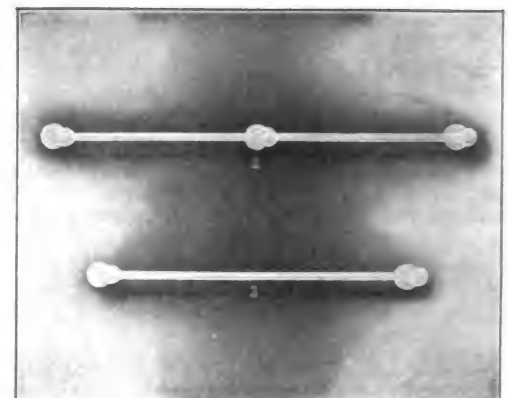
No. 655
 White China Match Holder, \$3.00



No. 658
 White China Shelf with China Brackets
 30 x 5 inches, \$6.40 30 x 6 inches, \$6.60
 36 x 5 inches, 6.90 36 x 6 inches, 7.10



No. 638. China Robe Holder - - - \$1.00
 No. 639. China Robe Hook - - - 1.00
 No. 640. China Toilet Paper Holder - - - 1.20



White China Towel Bar Holders with White Glass Rods
 No. 2. 48 inches, Bar 1 inch, \$3.80
 No. 3. 36 inches, Bar 1 inch, 5.90



Baby Soap Holder, \$1.40



Croton Set with either Gold or Silver Decorations, \$3.50



Upper No. 615
 White China Soap Holder, \$2.00
 Lower No. 614
 White China Open Sponge Holder, \$8.00



Croton Set with either Gold or Silver Decorations, \$4.00

"A.B.C." SYSTEMS

Wheeling Sanitary Manufacturing Company

Manufacturers of

Plumbers' Earthenware, Solid Porcelain and Enameled Iron Products

Works
TILTONVILLE, OHIO
WHEELING, W. VA.
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MAIN OFFICE
WHEELING, W. VA.

PRODUCTS—VITREOUS CHINA WATER CLOSETS, LAVATORIES,
CLOSET FLUSH TANKS, and all Kinds of PLUMBING SPECIALTIES

SOLID PORCELAIN BATH TUBS, SHOWER BATHS, LAVATORIES,
KITCHEN, PANTRY AND SLOP SINKS, LAUNDRY TRAYS, DRINKING
FOUNTAINS AND URINAL STALLS

ENAMELED-IRON BATH TUBS, KITCHEN SINKS, LAVATORIES
AND CLOSET FLUSH TANKS

Our Catalog "D," which will be mailed upon request, describes
a complete line in each division, to which we are constantly
adding new pieces.



Plate 100 D
Enameled Iron
H. B. Lavatory

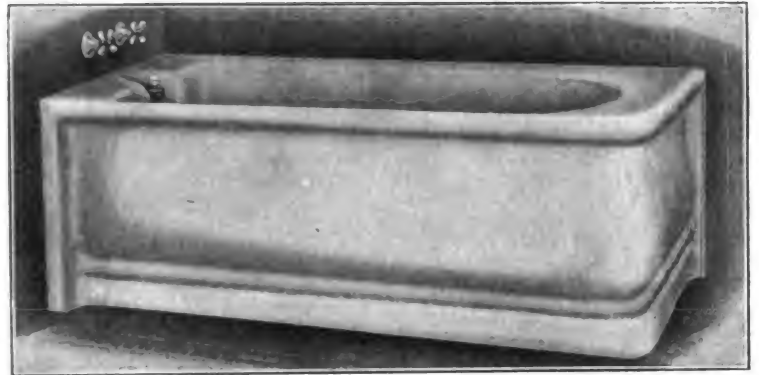


Plate 10 D
Solid Porcelain
Square Corner Bath Tub



Plate 176 D
Vitreous China
Syphon Jet Closet Bowl

TECHNICAL DESCRIPTION—We use the best materials
and employ the most skilled workmen in the manufacture of
our products. The smooth and hard texture of our glaze
makes crazing impossible.

Our goods are installed in many of the modern Private
Residences, Hospitals and Hotels, among them being the
Statler Hotels at Buffalo, N. Y., and Cleveland, Ohio; The
Hotel Hermitage, Nashville, Tenn.; The Hotel Seneca,
Rochester, N. Y.; The Hotel McLure, Wheeling, W. Va., and
others, to the entire satisfaction of all concerned.

ILLUSTRATIONS—The illustrations here given only show
one example each of our three distinct lines of Products.

"A.B.C." SYSTEMS

CO-OPERATIVE SERVICE—The services of our modelers
are at the disposal of Architects and others in planning com-
plete equipment of special designs for Hospitals, Hotels,
Apartment Houses, Office Buildings, etc. Our representatives
will call, upon request, and explain details.

American Porcelain Company

NEW YORK OFFICE
 101 Beekman Street

NEW BRIGHTON, PA.

PRODUCTS—Manufacturers of "PERFECTION" SOLID PORCELAIN, INCLUDING LAVATORIES; DRINKING-FOUNTAINS; KITCHEN, PANTRY AND SLOP SINKS; LAUNDRY TRAYS, AND ACID PROOF TANKS

COLOR—Our "Perfection" Solid Porcelain Ware is usually made "All White," but all shapes for pantry, kitchen and laundry installation are also made with a cane color outside, and the

interior and roll rims white. This advantage is valuable where the interior finish of these rooms is in natural wood.



ILLUSTRATIONS — All shown herewith are fairly representative of our line, and are presented with the aim to give architects a general idea of our high-class products.

PRICES — Furnished upon application.

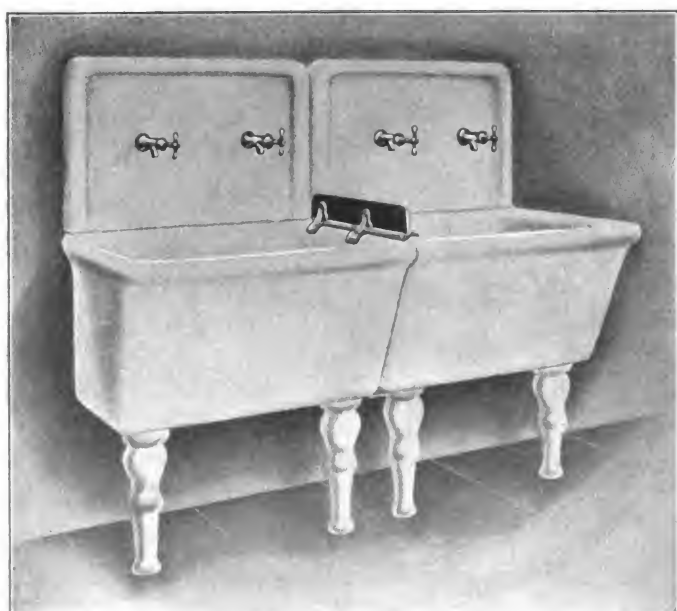
GUARANTEE — All our goods are guaranteed to be strictly sanitary and proof against cracking and crazing under any ordinary circumstances.



OVAL LAVATORY ON PORCELAIN PEDESTAL, 33X24 INCHES;
 ALSO WITH FLUTED PEDESTAL



OFFICE LAVATORY WITH SOLID BACK
 20X20 INCHES



THREE-QUARTER ROLL-RIM LAUNDRY TUBS
 24 INCH 29 INCH



THREE-QUARTER ROLL-RIM KITCHEN SINK
 All measurements outside except depth, which is inside. 24" x 17" x 6", 30" x 20" x 7", 36" x 22" x 7", 42" x 24" x 7", 48" x 24" x 7". Also made all-roll rim. Also furnished with tinned or bronze iron legs.

"A.B.C." SYSTEMS

Union Sanitary Mfg. Co.

Manufacturers of Cast-Iron Enameled Plumbing Fixtures

General Offices and Factory
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PRODUCTS—"Union" Cast-Iron Enameled Plumbing Fixtures: BATHTUBS; SITZ, FOOT, CHILD'S AND RECEPTOR BATHS; LAVATORIES; DRINKING FOUNTAINS

ROLL-RIM, INTEGRAL AND FLAT-RIM SINKS; SINK BACKS; DRAIN BOARDS; ROLL-RIM AND FLAT-RIM SLOP SINKS; ROLL-RIM AND FLAT-RIM LAUNDRY TRAYS

SINK AND LAUNDRY TRAY COMBINATIONS; CLOSET TANKS; CLOSET COMBINATIONS; GREASE TRAPS; URINALS

GUARANTEE—All our "Union Products" illustrated in our Catalog are sold under a Full and Absolute Guarantee.



PLATE A-42
"UNION" PORCELAIN-ENAMELED PEDESTAL LAVATORY

With N. P. Fuller Combination Supply and Waste Fittings, with China Indexed Handles, China Knob on Waste, N. P. Supply Pipes and Vented P Trap.

DIMENSIONS

Size 20x26 inches.	D Basin 11x15 inches
PRICES	
Plate A-42, complete as described.....	\$48.75
Plate A-42, with Ideal Waste only.....	31.00
Plate A-42, less all fittings.....	26.50



PLATE A-51
"UNION" PORCELAIN-ENAMELED ONE-PIECE RECESS LAVATORY

With Concealed Hangers, N. P. Chain Stay and Overflow Grate, N. P. Compression or Fuller Cocks, with China Indexed Handles, N. P. Supply Pipes and Vented P Trap.

DIMENSIONS

Size 21x26	Inches	Back 8
Size 21x31	D Basin 13x17	Back 8
	D Basin 13x17	
PRICES		
Enameled all over as described....	21 x 26	\$34.00
Enameled all over, less fittings....		\$39.00
Enameled exterior, as described....		25.25
Enameled exterior, less fittings....		20.25



BARBER LAVATORY, PLATE A-95
"UNION" PORCELAIN-ENAMELED DOUBLE-BASIN BARBER LAVATORY

With N. P. Fuller Double Shampoo Cock, Sprinkler and Traps. Especially adapted for Sanatoriums, Manicure and Barber Parlors.

DIMENSIONS

Size 26½x42½	Inches	Two D Basins 14x18
Height 32		Depth of apron 5½
PRICES		
Plate A-95, complete as described.....		\$69.00
Plate A-95, less fittings.....		50.00



"PREMIER," PLATE A-1

"UNION" PORCELAIN-ENAMELED BATH ON BASE

(For either right or left corner), for setting in tile floor and wainscoting; with N. P. Fuller or Compression Bell Supply and Waste Fittings.

DIMENSIONS

Width from wall over front rim.....	Inches	28½
Width of roll rim.....		3½
Flat rim, 2¼ inches over all (1 inch outside of tile), depth inside.....		17½
Height to top of rim.....		22½

PRICES

Plate A-1, as described.....	5 ft.	\$88.00
Plate A-1, bath only, drilled for fittings shown.....	5¼ ft.	\$93.50
	5½ ft.	73.50

"A.B.C." SYSTEMS



PLATE A-98
"UNION" PORCELAIN-ENAMELED ROLL-RIM TROUGH DRINKING FOUNTAIN

With Exposed Brackets, N. P. Self-Closing Valves, with China Jet and Concealed Pressure Regulators, Outlet Strainer, Galvanized-Iron Supply Pipe and Vented P Trap.

DIMENSIONS

Width over Roll Rim.....	Inches	12	Length with three Valves.....	Inches	42
Depth.....		22½	Length with two Valves.....		30
Length with four Valves.....		54			

PRICES

Plate A-98, as described.....	Sizes	30-in.	42-in.	54-in.
If less P Trap, deduct.....		\$35.00	\$45.50	\$56.00
If less supply pipes, deduct.....		3.50	3.50	3.50
If less N. P. Valves, deduct.....		6.00	8.25	10.50
		13.00	19.50	26.00

Cochran, Drugan & Co.

Manufacturers of Sanitary Pottery Ware

TRENTON, NEW JERSEY

PRODUCTS—Vitreous China: WATER-CLOSETS, TANKS, URINALS, BASINS, HOPPERS, ETC.

Solid Porcelain: LAVATORIES, SINKS, LAUNDRY TUBS, URINAL STALLS, ETC.

SPECIALTIES—Our line contains many specialties covering all general demands of modern installation. We will furnish special patterns to meet architectural requirements.

DISTRIBUTION—Our goods are for sale by plumbing supply houses in all parts of the United States. A large stock is also carried at our factory in Trenton, N. J.

PRICES—Discount sheets covering our entire line are in the hands of plumbing supply houses, and they will quote prices on request.

THE CODRU CLOSET
Patented Sept. 14, 1909



REGULAR PATTERN SYPHON ACTION CODRU CLOSET
Roughs in 12 inches from center of outlet to center of tank.



REVERSED TRAP SYPHON ACTION CODRU CLOSET
Roughs in 9½ inches from center of outlet to center of tank.



CROSS SECTION CODRU CLOSET AS SHOWN ABOVE



CROSS SECTION CODRU CLOSET AS SHOWN ABOVE

The Codru Closet is the only truly Syphon closet that works with a jet above the water line. Has 3½-inch water seal, and will

operate with 3 gallons of water. The bowl is washed perfectly, there being no projection to allow dirt or soil to collect.

"A.E.C." SYSTEMS

E. B. Badger & Sons Company

Manufacturers of Copper Hot-Water Boilers and Pantry Sinks

Established 1841

63-75 PITTS STREET
BOSTON, MASS.

PRODUCTS—COPPER HOT-WATER BOILERS; "BADGER" WHITE-METAL, GERMAN-SILVER AND COPPER PANTRY SINKS

In many places our Heavy-Pressure Boilers are still in good working condition after a continuous use for over 40 years.

"BADGER" HIGH-GRADE PRESSURE BOILERS—Are of modern design, constructed of heavy copper, thoroughly tinned inside to prevent corrosion and discoloration of the water, and are manufactured by the best of workmanship.



HIGH-GRADE
PRESSURE
BOILER

DETAILS—Reinforced on inside with brass rings to prevent collapsing. The top is a compressed dome head riveted on and soldered. The bottom head is made of hardened copper compressed into shape and thoroughly sweated and soldered. These Boilers are made for city pressure from 80 to 115 pounds and tested, respectively, to 200 and 250 pounds cold-water pressure. All boilers are stamped over the side coupling with our "Grasshopper" Trade Mark.

HEATING SOURCE—Some of our boilers are arranged to be heated by means of a steam coil inside the boiler or by an independent water heater. These systems may be combined among themselves with the regular waterback heating to provide for various conditions, and afford for each case the maximum of convenience and economy.

TANK-PRESSURE BOILER—For supply from a tank. This may be placed 30 or 40 feet above the boiler. An expansion pipe from boiler to tank acts as a vacuum valve. Impossible for boiler to collapse.

KEEPKLEEN BOILER—"Badger" Keepkleen Double-Dome Patented Boiler (illustrated) is one of our latest-developed types. Both heads are domed, riveted, sweated and soldered to boiler shell. Lower head is inserted inside of shell, the latter being extended downwards a sufficient distance to form a stand.

Bottom coupling is a patented combination of handhole and water coupling. This allows the riveting on of bottom head through the opening, which is also large enough to allow of inserting a hose for the purpose of thoroughly washing out the boiler when desired. In this respect "Keepkleen" is complete in sanitary construction; the inside can be cleaned, where it stands. Other boilers must be taken down to be cleaned.

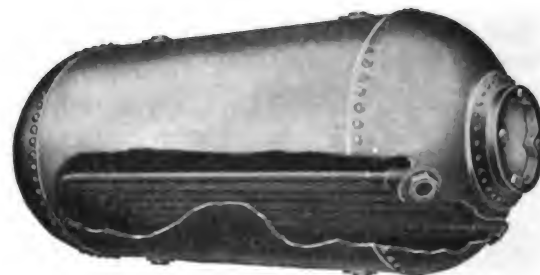


KEEPKLEEN
BOILER

HEAVY-PRESSURE BOILER—Our Boilers of this type are made up to 1500 gallons' capacity, and are tested as high as 300 pounds' cold-water pressure, and are good for working pressures up to 150 pounds. Made of the heaviest and best quality of Lake Superior copper. They can be furnished either with a steam coil, as shown in the above illustration, or without. In either case they can be connected up with a hot-water heater. This connection allows the boiler to be run without steam in the summer time.

Connections on the heads of these boilers are brazed, and on the shell are flanged-riveted.

"A.B.C." SYSTEMS



HEAVY-PRESSURE BOILER AND STEAM COIL
For hotels, hospitals, large residences, apartment houses, office buildings, etc.

A FEW REFERENCES

Residence, Fairfield, Conn. (2).	250 gal.	Saranac Apartments, Boston, Mass. (2).....	450 gal.
Residence of Galen Stone, Marion, Mass.	250 gal.	Young's Hotel, Boston, Mass.	500 gal.
State Normal School, Salem, Mass.	300 gal.	New Dormitory, Wellesley College	750 gal.
Stearns Building, Boston, Mass.	300 gal.	State School for Boys, Portland, Me.	300 gal.
Hotel Touraine, Boston, Mass.	1200 gal.	Abbott Academy, Andover, Mass.	300 gal.
Yonkers Hospital, Yonkers, N. Y.	350 gal.		

PANTRY SINKS—Made in "Badger" White Metal, German Silver and Copper. Many years' experience in building "Badger" Quality Pantry Sinks to special designs of leading Architects enables us to produce a line for general use that possesses strength, convenience and durability.

Badger Sinks are suitable for residences, restaurants, apartments and hospitals. Badger Special Sinks can be made to meet all requirements.



DOUBLE PANTRY SINK AND DRAIN BOARD



BADGER'S SPECIAL PANTRY SINK
Made to specifications, in copper, white metal or German silver.

HOW TO SPECIFY—Boilers—State capacity, water pressure and type required and, "to be Badger Quality."

Pantry Sinks—Give dimensions of sink and size of drainboard and state kind of metal.

PRICES—Quotations and any further desired information will be gladly furnished on application.

Dahlquist Mfg. Co.

Manufacturers of Copper Boilers

40 WEST THIRD STREET
SOUTH BOSTON, MASS.

Factory
11-19 BOLTON STREET

PRODUCTS—ALL KINDS OF COPPER BOILERS, INCLUDING HEAVY-PRESSURE BOILERS, DIRECT- OR STREET-PRESSURE BOILERS, TANK-PRESSURE BOILERS AND BOILER STANDS

TECHNICAL DESCRIPTION—OUR HEAVY-PRESSURE BOILERS are made in varying capacities from 100 to 1800 gallons, with or without coils, of the best material and workmanship, thoroughly inspected and tested, and absolutely guaranteed. We make these boilers to stand any required working pressure up to six hundred pounds. Adapted for large residences, apartment houses, office buildings, hospitals, etc.



DIRECT-PRESSURE AND KITCHEN BOILERS WITH RIVETED DOME HEAD AND BRASS REINFORCING RINGS

OUR DIRECT- OR STREET-PRESSURE BOILERS are made with dome head, riveted and polished, in varying capacities from 30 to 200 gallons, and in four pressures tested respectively to 150, 200, 250 and 300 lbs.

OUR RANGE BOILERS vary in capacity from 300 to 400 gallons. Stock range boilers are made in various pressures up to 150 lbs., and to order up to 300 lbs. The direct-pressure and range boilers are heavily reinforced on the inside by brass rings, and on the 250 and 300-lb. pressure boilers both ends are riveted. All direct-pressure boilers above 80 gallons capacity are fitted with a hand hole in the bottom which allows the entrance of hand and arm into the boiler.

The working pressure in all cases is to be figured at one-half the hydrostatic test.



1000 GALLON EXTRA HEAVY COPPER PRESSURE BOILER BUILT FOR MOUNT KINEO HOUSE, MOOSEHEAD LAKE ME

OUR TANK-PRESSURE BOILERS are made in varying capacities from 30 to 300 gallons, and will stand a pressure of about 25 lbs. Stock sizes run up to 100 gallons capacity.

COILS may be had, if desired, with all boilers.

SIZES—RANGE BOILERS

Length	Diameter	Gallons
5 ft.	12 in.	30
5 "	14 "	40
5 "	16 "	50
5 "	17 "	60
5 "	18 "	70
5 "	20 "	80
5 ft. 6 in.	20 "	90
6 "	20 "	100
6 "	22 "	125
6 "	25 "	150
6 "	30 "	200
6 "	32 "	250
6 "	35 "	300
7 "	35 "	350
8 "	35 "	400



TANK-PRESSURE BOILERS

DIRECT-OR STREET-PRESSURE BOILERS

With Dome Head, Riveted and Polished

30 gal.	150 lbs. test	200 lbs. test	250 lbs. test	300 lbs. test
30				
40				
50				
60				
70				
80				
100				
125				
150				
175				
200				

TANK-PRESSURE BOILERS

30 Gallon Special No.	1
30	2
30	Regular
30	3
40	Special
40	Regular
50	
60	
70	
80	
100	



BOILER WITH STEAM COIL

OUR BOILER STANDS are made to suit the various types of boilers, of cast iron and of wrought iron.

HOW TO SPECIFY—Hot-water boiler shall be a "Dahlquist" copper boiler of.....capacity,type and guaranteed for a working pressure of.....lbs.

REFERENCES—We give below a partial list of recent installations:

Building	Location	Architect	Boiler
City Hospital Relief Station	Boston, Mass...	Kendall, Taylor & Co.	350 gal. extra heavy pressure with 80 feet copper pipe Steam Coil
Residence, Jos. Leiter	Beverly, Mass..	Parker, Thomas & Rice	300 gal. heavy pressure
Consumptive Hospital Building	Mattapan, Mass.	Hollis French & Allen Hubbard, Engineers	100 gal., 150 gal., 200 gal., and 300 gal. heavy pressure
East Boston Relief Hospital, Branch of City Hospital	East Boston, Mass.	.....	300 gal., heavy pressure with 80 feet copper pipe Steam Coil

Peerless Heater Co.

Manufacturers of

Peerless Kitchen Boilers and Gas Water Heaters Combined

Phone { 2688
 Randolph { 2689
 Auto—42-687

COR. STATE AND LAKE STREETS
 CHICAGO, ILL.

AGENCIES THROUGHOUT UNITED
 STATES, CANADA AND EUROPE

PRODUCTS—The PEERLESS KITCHEN BOILER, for Hot Water Supply

DESCRIPTION—The Peerless Kitchen Boiler heats water in the least time and at the smallest possible cost and keeps the water circulating. The Peerless consists of a disc, burner and shell. The extreme simplicity of the inside construction of this Boiler should receive special attention. The heat generated in the burner strikes the water spreader or disc (which is full of water) and passes directly into the water, causing it to circulate. The surface of the disc is ample for the work and its size prevents the flame from coming into contact with the bottom of the boiler and thus protects it.

DETAILS OF CONSTRUCTION—The left-hand pipe entering the top of the boiler carries the cold water into same; thence it flows through a pipe out of bottom of the boiler into the disc, where it comes immediately into contact with the full heat of the flame. The water is quickly heated and rises through the center pipe to top of boiler and the supply pipes above.

The flames lick around the outside of disc, and the heat flows all the way up through the hollow tube of the boiler and surrounds the central hot-water pipe. The water never comes in contact with any soot, gases or other products of combustion.

This boiler is made of galvanized iron with brazed seams, and tested to stand a pressure of 200 pounds.

FUEL SOURCES—Gas and Gasoline—The Peerless is a self-contained heater, the burner being a part within the apparatus. No additional piping is necessary over what is usually required. The Peerless has two distinct gas burners: The large burner is for quick, instantaneous water heating; the small burner for the purpose of keeping the water at a uniform temperature. The thirty- and forty-gallon size boiler consumes on the large burner approximately thirty-five feet of gas per hour and the small or auxiliary burner consumes approximately five feet of gas per hour, therefore making it the most economical water heater obtainable.

GASOLINE BURNER—Where gas is unavailable the Gasoline Burner, as shown in cut, may be readily installed in the Peerless Boiler. The cuts show each style of boiler.

The Gasoline System is operated from a pressure-tank that holds the gasoline. The gasoline outfit consists of the boiler specially made with a door for access, special gasoline burner, 5-gallon pressure tank for gasoline and air, pressure gauge, large brass floor pump, valves and connections, and 10 feet of hollow copper wire to feed gasoline to burner.

ADVANTAGES—1. The Peerless gives pure, clear water fit to drink. 2. Its simplicity of construction and operation. 3. No vent pipe necessary, as all gas and gasoline fumes are consumed. 4. The auxiliary burner alone keeps water heated to 140 degrees Fahrenheit, day and night, at total cost of ½ cent per hour. 5. No dirt, soot or waste of fuel. 6. Noiseless and odorless. 7. It gives hot water in 2 minutes. 8. If desired, a vent valve may be installed. 9. It can be connected to a storage tank for heating large quantities of water. 10. The Peerless can also be made an automatic or instantaneous water heater.

INSTRUCTIONS FOR ORDERING—When ordering please state whether the boiler is to be used for gas or gasoline. When for gasoline use it is necessary to have a door in the boiler, while for gas it is a matter of convenience, not a matter of necessity. In all cases where a door is ordered the cost is \$1.00 extra.

AWARD—Gold Medal awarded to Peerless in competitive test of Water Heaters at Portland, Oregon, Fair, 1905.

"A.B.C." SYSTEMS

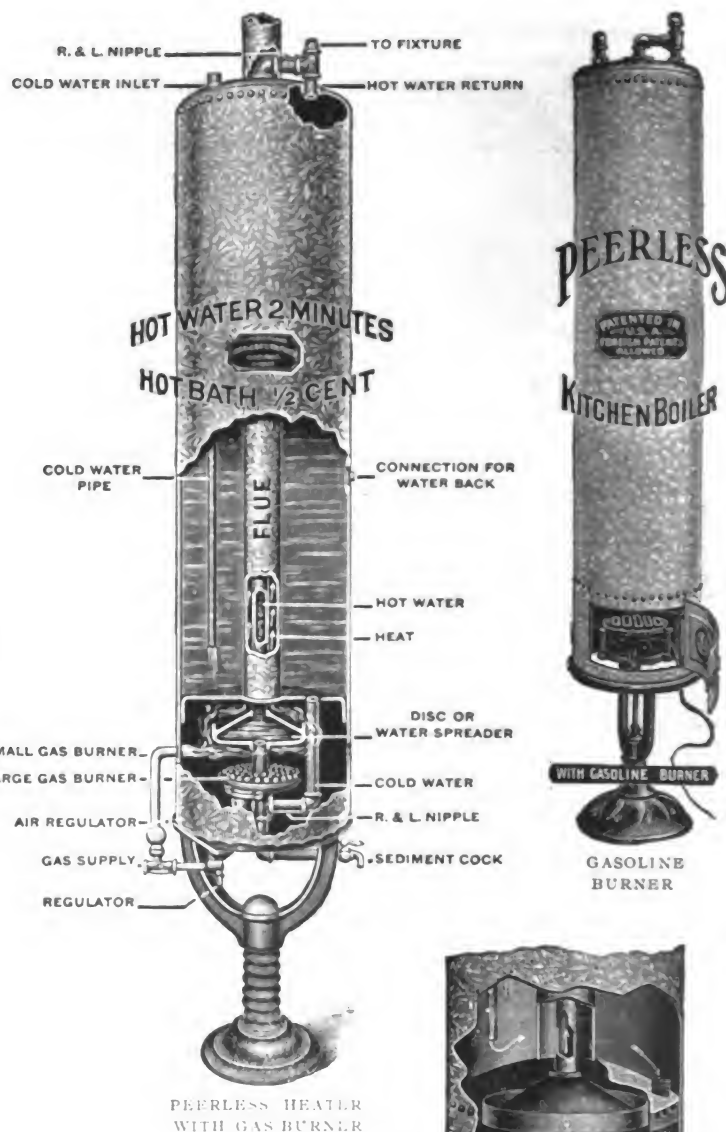
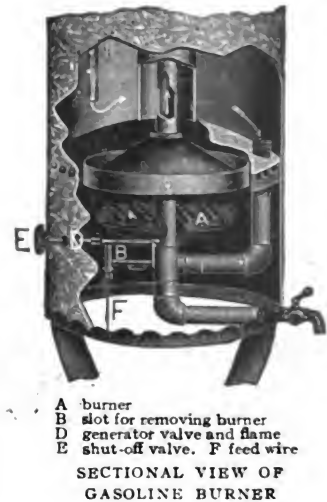


TABLE OF CAPACITIES WITH PRICE LIST

Number	Capacity	Length	Diameter	List Price
1	18 gals.	3 feet	12 inches	\$27.00
2	30 "	5 "	12 "	28.00
3	40 "	5 "	14 "	30.00
4	60 "	5 "	18 "	52.00
5	82 "	5 "	20 "	57.00
6	100 "	5 "	22 "	80.00

Stands Extra. Fire Doors \$1.00 Extra.
 These prices are subject to change. All goods sold f.o.b. factory. Flue connections furnished upon request. Nos. 1, 2, 3, 4, 5 and 6 are always kept in stock. Any size made to order.



GUARANTEE—The Peerless is guaranteed for 3 years against faulty material and workmanship in the United States, irrespective of water conditions.

The Hoffman Heater Company

Manufacturers of

Automatic, Storage and Tank Heaters, and Thermostatic Valves
LORAIN, OHIO

PRODUCTS—INSTANTANEOUS AUTOMATIC GAS WATER HEATERS, TANK HEATERS, STORAGE HEATERS, THERMOSTATIC VALVES

DESCRIPTION—The Nos. 3-D, 4-D and 6-F, as shown in exterior and interior view by cuts at side, are constructed with double Cast-iron Shell, with $\frac{7}{8}$ -inch dead-air space between. They are also equipped with Thermostatic Valves of the most modern type. These Heaters are automatic; they can be adjusted for either Artificial or Natural Gas, as desired, and are suitable for any dwelling or any place where a large quantity of hot water is required.

Nos. 25, 28 and 30 are Automatic, and equipped with pressure valve only, and are suitable for small residences, bungalows or flats. They can be adjusted for either Artificial or Natural Gas.

The Nos. 3-A and 4-A are also Automatic, and equipped with pressure valve only, and are suitable for a small residence, bungalow or flat. These heaters are built for Natural Gas only.

PRICE LIST OF HOFFMAN INSTANTANEOUS AUTOMATIC GAS WATER HEATERS

No. of Heater	Price	Gas Supply from Meter, Inches	Kind of Gas	Size of Meter Light	Heating Gallons per Minute	Height, Inches	Diameter, Inches	Shipping Weight, Pounds
3-A	\$50.00	1	Natural	10	3	34	13	100
4-A	60.00	1	Natural	10	4	38	13	125
25	50.00	1	Artificial	20	2	34	13	110
30	65.00	1	Artificial	30	3	38	13	150
3-D	85.00	1	Either	30	3	42	14	300
4-D	100.00	1	Either	40	4	45	17	350
6-F	110.00	1	Either	45	6	50	20	520

TANK HEATERS—We make Tank Heaters in all different sizes and for any use. All Simple-Coil Heaters are made with steel jackets lined with asbestos board.

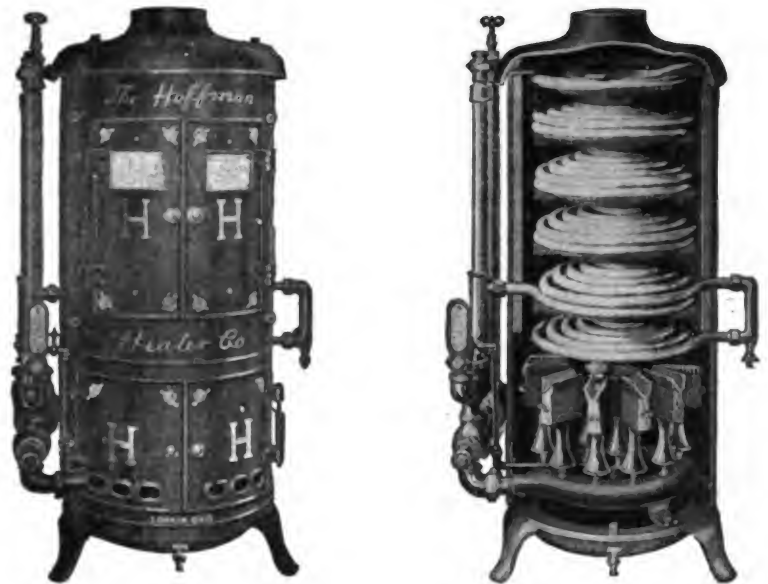
All Double-Coil Heaters are made with Cast-Iron Jackets and equipped with very powerful Gas Burners which heat rapidly and are very economical in the use of gas and will last for an indefinite period. We highly recommend the Double-Coil Heater in all places where Tank Heaters are used.

PRICE LIST OF COPPER-COIL TANK HEATERS (NON-AUTOMATIC)
For use with either Natural or Artificial Gas, as specified

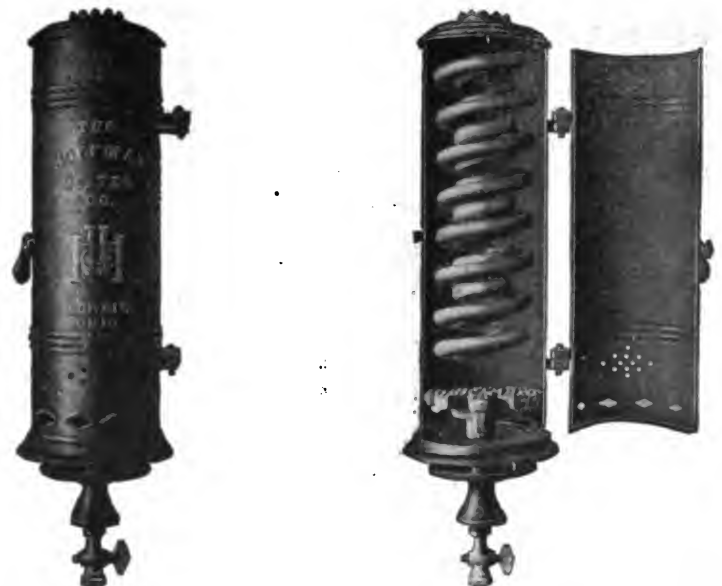
Catalogue Number	Price	Diameter, Inches	Height, Inches	To Be Used With Boilers (Gallons)	Shipping Weight
1	\$12.50	7 $\frac{1}{2}$	15	30 to 40	18
1 $\frac{1}{2}$	15.00	7 $\frac{1}{2}$	18	40 to 60	20
2	20.00	7 $\frac{1}{2}$	21	40 to 80	25
10	20.00	8	19	40 to 80	25
12	25.00	8	22	40 to 100	28
9	32.00	7 $\frac{1}{2}$	25	40 to 100	45
16	30.00	7 $\frac{1}{2}$	24	40 to 100	42
18	32.00	7 $\frac{1}{2}$	24	40 to 100	48
20	35.00	7 $\frac{1}{2}$	24	40 to 120	50

THERMOSTATIC VALVES—This valve should be installed in the side of the boiler. It is very simple in construction, and depends upon the law of expansion and contraction of metals from heat and cold. The gas supply is controlled by the temperature of the water. The valve may be set for any temperature between 130° and 190° and no further attention is necessary. The cost of the valve is saved many times over in the course of a few months on account of the small amount of gas used.

"A.B.C." SYSTEMS



EXTERIOR AND INTERIOR VIEWS OF HEATERS 3-D, 4-D AND 6-F INSTANTANEOUS AUTOMATIC GAS WATER HEATERS



EXTERIOR AND INTERIOR VIEW OF NO. 9 COPPER-COIL TANK HEATERS (NON-AUTOMATIC)



THE HOFFMAN THERMOSTATIC VALVE

PRICE.

No. 250, For Natural Gas, $\frac{3}{4}$ -in. connection, 10-in. Tube..... \$7.00
No. 260, For Artificial Gas, $\frac{1}{2}$ -in. connection, 10-in. Tube..... 8.00

Compound Injector and Specialty Co.

Sole Manufacturers of
"Dehn's" Sanitary Plumbing Specialties, Water Softener
and Scale Removing Devices

419-421 NORTH 52d AVENUE
CHICAGO, ILL.

Long Distance Telephone
Austin 543

Cable Address, "Compound"
Western Union Code Used

PRODUCTS—DEHN'S AUTOMATIC WATER SOFTENER AND SCALE REMOVING DEVICES, COMPOUND INJECTORS, "PEERLESS" WATER SOFTENER, "KOMPOST" BRICKS

"ACME" ADJUSTABLE FLOOR DRAINS, WITH AND WITHOUT AUTOMATIC BACK-WATER VALVES; "PEERLESS" GARAGE, LAUNDRY AND STABLE FLOOR DRAINS; HYGIENIC AND "ACME" GREASE TRAPS, WITH AND WITHOUT WATER COOLERS

"ACME" CLOSED-END ADJUSTABLE CLOSET BENDS AND EXTENSIONS; IRON DRUM TRAPS; CLEANOUT TEES; END FERRULES; REFRIGERATOR DRAINS; BLOW-OFF, CATCH AND GRAVEL BASINS and other Accessories to make a complete, perfect and Sanitary Plumbing System

DEHN'S "ACME" AUTOMATIC BACK-WATER TRAPS AND COMBINED ADJUSTABLE FLOOR DRAINS—We call special attention to the Deep Water Seal (4") contained in the continuous pipe trap of our "Acme" Floor Drain Adjustable Receiver. Convenient to install the trap; High Outlet, Brass Valve, Copper Solderless Float protected in a cage, Solid Center in Strainer, thus forcing all the water through the sand cup and preventing sticks, string and other matter from obstructing the valve seat. Manufactured in more than one hundred (100) sizes and styles for every type of installation.

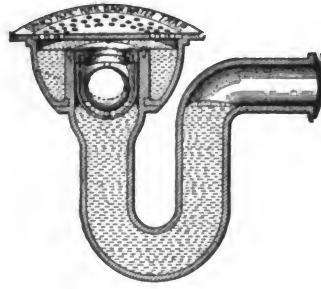


FIG. 5
Patent Allowed

DEHN'S "ACME" AUTOMATIC BACK-WATER TRAP AND COMBINED ADJUSTABLE FLOOR DRAIN

These fixtures cover a long felt want. Note how quickly and easily they can be installed (only one joint to caulk). You can make a first class sanitary job with less labor and material and at half the cost of doing it the old way. Positively no Flood with these fixtures. They fill all the requirements of the most rigid sanitary laws.

Water Seal.....	Inches	4	4	4
Size of Outlets.....	Inches	2	3	4
Diameter of Top.....	Inches	9	9	12
Depth over all.....	Inches	12	12	14
Length over all.....	Inches	13	14	21
Receiver above outlet of Trap.....	Inches	2	2	2
Average Weight.....	Pounds	20	25	50
Iron Top and Strainer.....	Each	\$7.00	\$8.00	\$12.00
With Finished Brass Top and Strainer.....	Each	12.00	13.00	20.00
With N. P. Brass Top and Strainer.....	Each	14.00	15.00	22.00

"A.B.C." SYSTEMS

SANITARY SAFEGUARDS—Architects and contractors will safeguard the health of their clients by specifying our Sanitary Devices. As their trade names, "Acme" and "Peerless," imply, we believe them unexcelled in design and operation. They are durable in make, in every way reliable; no other devices on the market may be substituted without risk for the "Dehn" line as being "equally as good." The essential parts of our devices are patented. We manufacture the largest and most complete line of Sanitary Drainage Specialties in the United States. We will be pleased to furnish further information, together with our illustrated Catalog, upon request.

DEHN'S "ACME" WATER COOLING GREASE CATCH BASINS—So constructed that it is necessary for the hot water entering the basin to circulate four times through the volume of water in the basin ere it passes into the outlet to the sewer. In this construction, we positively prevent any grease from getting out of the basin. All the grease can be conveniently removed, as shown below. Should the cover remain out of place, no sewer air can escape into the premises.

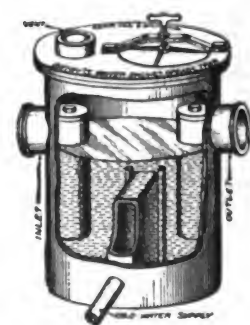


FIG. 27
Patent Pending

DEHN'S "ACME" WATER COOLING GREASE CATCH BASIN

These Grease Catch Basins are especially designed to keep the water in the basin at the low temperature, by connecting the cold water supply pipe leading to kitchen sink or other fixtures with the Water Jacket in basin. Just as soon as the greasy water enters the basin, the grease congeals and floats to the top of the water in basin. This grease can be easily removed by anyone. The handhole is provided with a malleable iron saddle and heavy thumb-screw. These Grease Catch Basins are approved by Sanitary Engineers and Boards of Health in all the leading cities.

Number	12	20
Diameter of Top.....	Inches 12	20
Depth over all.....	Inches 18	30
Size of Waste Inlet Connection.....	Inches 2	4
Size of Waste Outlet Connection.....	Inches 2	4
Size of Vent Hub Connection.....	Inches 1½	2
Size of Water Supply Connection.....	Inches ¾	¾
Painted	Each \$30.00	\$50.00

These Catch Basins can be furnished enameled inside, and with Iron Pipe threaded openings if desired. Prices upon application.

Continued on next page

AUTOMATIC WATER SOFTENER AND SCALE REMOVING DEVICES—They will positively prevent the accumulation of lime, magnesia and other incrusting minerals in Water Backs, Coils, Heaters, Boilers and wherever these difficulties are experienced.

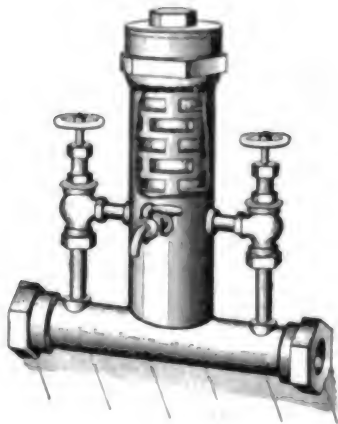


FIG. 40
 Patented and Patents Pending
 NO. 6—1-INCH COMPOUND INJECTOR

The No. 6 1-inch Compound Injectors are recommended for large water backs, small tanks, laundry or automatic instantaneous heaters and furnace coils.

No. 5— $\frac{3}{4}$ in. Compound Injectors I. P.	\$12.00
No. 6—1 in. Compound Injectors I. P.	15.00
No. 6— $1\frac{1}{2}$ in. Compound Injectors I. P.	17.50
No. 6—1 $\frac{1}{2}$ in. Compound Injectors I. P.	20.00
No. 6—2 in. Compound Injectors I. P.	23.00
No. 5—"Kompost" Bricks, per dozen	3.00
No. 6—"Kompost" Bricks, per dozen	4.20

DEHN'S "PEERLESS" FLOOR DRAINS WITH AUTOMATIC BACK WATER VALVES—Will seal with or without water. Positively no sewer air can escape into the building through these fixtures. Note location and position of Back Water Valve, Strainer, Guard and Receptacle.

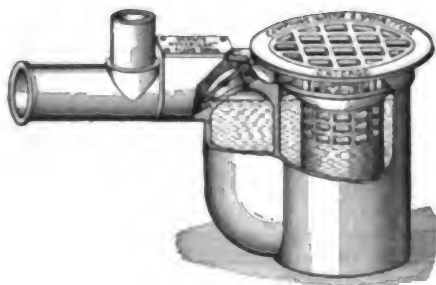


FIG. 20
 Patent Pending

DEHN'S "PEERLESS" COMBINED FLOOR DRAINS AND AUTOMATIC BACK-WATER TRAPS

We call particular attention to the deep water Seal in this Trap. The Handhole is flush with the floor, making it readily accessible for inspection without disturbing Trap or any of its connections. These Floor Drains are designed to fill all the requirements to make them perfectly Sanitary, regardless of where they are to be installed.

Water Seal	Inches	5	5
Size of Outlets	Inches	2	4
Diameter of Top	Inches	9	12
Depth over all	Inches	11	14
Length over all	Inches	22	24
Average Weight	Pounds	50	100
Iron Top and Strainer	Each	\$12.00	\$15.00
With Brass Finished Top and Strainer	Each	20.00	23.00
With N. P. Brass Top and Strainer	Each	23.00	25.00

DEHN'S "PEERLESS" GARAGE FLOOR DRAINS—Specially designed for use in automobile garages. The catch basin is provided with a large receptacle for receiving the matter washed from the motor cars. With this arrangement, the matter can accumulate for some time, not interfering with the operation of the drain. When it will become necessary to remove this accumulation, the receptacle can be lifted out of the basin with contents. The Guard in the air chamber will prevent matches, sticks, string and other material from getting down into the receptacle.

The basin is provided with a large air chamber between the top strainer and water seal. This air chamber is provided with hub vent outlet connections, from which vent pipes can be conveyed to the outside of the building, and with this arrangement the waste gasoline and oil flowing into the basin can evaporate and the fumes or gases will escape to the outside of the building. The garage will be absolutely free from dangerous gases or bad odors which otherwise pollute the atmosphere.

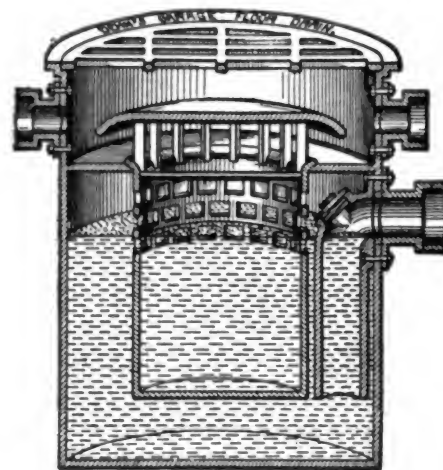


FIG. 22
 DEHN'S "PEERLESS" GARAGE FLOOR DRAINS

These Floor Drains should be installed in every automobile garage to prevent accidents resulting from the formation of gases; also to prevent the sewer from choking up.

Diameter of Top	Inches	20
Size of Outlets	Inches	4
Depth over all	Inches	30
Vent Hub Outlets	Inches	2
Iron Top and Strainer	Each	\$50.00

CO-OPERATION—We are continually making improvements in our line, hence, it will be to our mutual interest for you to keep in close touch with our firm in order to keep yourself posted. We are at your service. Command us at any time.

Wade Iron Sanitary Manufacturing Co.

Manufacturers of and Dealers in

Back-Water Gate Valves, Catch Basins and Appliances

18 EAST HARRISON STREET

CHICAGO, ILL.

Long Distance Telephone
 Harrison 6713-14
 Automatic 67-498

PRODUCTS—IRON MANHOLE COVERS for Iron and Brick Catch Basins; IRON SURFACE DRAINAGE CATCH BASIN COVERS; SPECIAL DRAINAGE FITTINGS AND CATCH BASINS MADE TO ORDER; WADE ACCESSIBLE FLUSHING CLEANOUT HOUSE DRAINAGE FITTINGS; ACCESSIBLE FLUSHING CLEANOUT BACK-WATER GATE VALVE APPLIANCE

SPECIAL NOTICE—This catalog embodies a general representation of the various products manufactured by the Wade Iron Sanitary Manufacturing Company. By sending us designs and description of special articles required in our line we will be pleased to send estimates. Some additional lines are shown in our catalog, which will be sent on request.

DESCRIPTION—The quality of the materials and workmanship in our specialties are the highest type. We co-operate with the architect in every way, and Mr. James J. Wade, our Sanitary Engineer, will give expert advice upon request. One point we wish to emphasize strongly is that the Wade Accessible Cleanout Back-Water Gate Valve Combinations are provided with pressure-water flushing jets which are easily connected with the supply pipe of buildings. Their use washes and cleans the face of back water gate valve fittings and drains, keeping them from clogging by sewage waste, etc.

STOCK—We carry in stock a complete line of all the products shown here. In this way orders can be promptly executed, insuring quick delivery. Our fittings comply with all the ordinances governing plumbing and drainage adopted by all municipalities. For special information write to us.

TERMS—Thirty days from date of invoice, 2% for cash 10 days.

FIG. 1—WADE ACCESSIBLE FLUSHING CLEAN-OUT BACK-WATER GATE VALVE—Straight Fitting, for prevention of flooding cellars and sewer gas.

PRICE LIST OF FITTINGS AND BACK-WATER GATE VALVES.

2" with 6" Ring and Cover.....	\$4.00
3" with 6" Ring and Cover.....	6.00
4" with 8" Ring and Cover.....	9.00
5" with 10" Ring and Cover.....	12.00
8" with 14" Ring and Cover.....	18.00
10"	33.00
12"	60.00
24"	175.00

We will manufacture any size required.

FIG 2—Fitting showing extension to grade.

PRICE LIST OF BACK-WATER GATE VALVES AND FITTINGS; WITH MANHOLE AND COVER.

2" - 6" Extension, 10" long.....	\$5.75
3" - 6" Extension, 10" long.....	7.75
4" - 10" Extension, 10" long.....	11.00
6" - 10" Extension, 10" long.....	15.00
8" - 14" Extension, 10" long.....	22.00



FIG. 1



FIG. 2

FIG 7—WADE FOUR-WAY ACCESSIBLE CLEAN-OUT BACK-WATER GATE VALVE—"Y" Branch Fitting.

PRICE LIST INCLUDES COVER.

With 1 Gate.....	\$20.00
With 2 Gates.....	22.00
With 3 Gates.....	24.00

Made only in 6" size.

PRICE LIST WITHOUT BACK-WATER GATE VALVE APPLIANCES.

4"	\$10.00
6"	16.00
8"	22.00
12"	35.00



FIG. 7

FIG. 8—Same as Fig. 7 with Extension.

PRICE LIST WITH BACK-WATER GATE VALVE, WITH 14" MANHOLE, 14" EXTENSION 10" LONG.

6" with 1 Gate.....	\$24.00
6" with 2 Gates.....	26.00
6" with 3 Gates.....	28.00

PRICE LIST WITHOUT BACK-WATER GATE VALVE, WITH MANHOLE AND COVER.

4" - 8" Extension, 10" Long.....	\$14.00
6" - 14" Extension, 10" Long.....	22.00
8" - 14" Extension, 10" Long.....	24.00
12" - 18" Extension, 8" Long.....	42.50

The best "Y" Branch Rodding Clean-out now on the market.



FIG. 8

FIG. 18—WADE FLOOR DRAIN CESSPOOL BACK-WATER GATE VALVE. The cover is fastened directly to Accessible Clean-out Manhole and easily removed for cleaning and inspection. These fittings are absolute protection against back water and sewer gas and excellent for use in school and laboratory floors.

PRICE LIST.

2-in.	\$7.50
4-in.	9.50
6-in.	16.00



FIG. 18

FIG. 27—WADE ACCESSIBLE FLUSHING CLEAN-OUT WATER JACKET GREASE CATCH BASIN—For Kitchen Sinks in accordance with health ordinance.



FIG. 27

OPERATION—The most important feature of these traps is the chilling chamber or jacket surrounding the body. The cold water supply is conducted through the chilling chamber, so that whenever water is drawn at the sink a fresh supply of water enters jacket. The waste in the inner part of the trap is thus kept constantly cold, congealing the grease entering the trap. The grease floats to the top; the clean-out cover permits its removal when necessary; the waste water having discharged its grease escapes near the bottom of the trap into the drain. The pressure-water dividing flushing jet is used to flush and clean interior of trap; it also removes gases generated by accumulated grease.

For Price List, Fig. 27, see page 2.

Send for Catalog of our Patent Back-Water Gate Valves, Iron Catch Basins and Floor Drains

"A.B.C." SYSTEMS

Continued on next page

PRICE LIST FOR FIG. 27.

	Diameter	Depth	Connection	
Inside	10 in.	12 in.	Waste Water, 2 in.	\$22.00
Outside	13 in.	15 in.	Pressure Water, 1/2 in.	
Inside	12 1/2 in.	13 1/2 in.	Waste Water, 2 in.	35.00
Outside	16 in.	16 1/2 in.	Pressure Water, 1/2 in.	
Inside	16 in.	20 in.	Waste Water, 3 in.	60.00
Outside	20 in.	25 in.	Pressure Water, 1 1/4 in.	
Inside	20 in.	22 in.	Waste Water, 3 in.	75.00
Outside	25 in.	26 in.	Pressure Water, 1 1/4 in.	

Traps are extra-heavy fine grade cast iron. For use in hotel and restaurant dish-washing these traps are unexcelled. They prevent pipes from clogging.

FIG. 31—WADE ACCESSIBLE FLUSHING CLEAN-OUT EXTRA HEAVY CAST-IRON CATCH BASIN. For use for gravel roof down spouts, grease sinks, surface drains, etc.

Diam.	Depth	Manhole	Price
16	20	14	\$16.00
16	24	14	20.00
16	30	14	24.00
20	26	14	24.00
20	30	14	28.00
20	36	14	32.00
24	24	14	30.00
24	30	14	32.00
24	36	14	36.00
24	42	14	40.00
24	48	14	44.00
30	32	16	38.00
30	36	16	42.00
30	42	16	46.00
30	50	16	50.00
30	60	16	56.00
36	60	20	80.00
36	72	20	100.00

FIG. 32—WADE ACCESSIBLE FLUSHING CLEAN-OUT EXTRA HEAVY CAST-IRON CATCH BASIN. Same as Fig. 31, showing extension to grade.

Diam.	Depth	Manhole	Price
16	20	14	\$20.00
16	24	14	24.00
16	30	14	28.00
20	26	14	28.00
20	30	14	32.00
20	36	14	36.00
24	24	14	34.00
24	30	14	36.00
24	36	14	40.00
24	42	14	44.00
24	48	14	48.00
30	32	16	45.50
30	36	16	49.50
30	42	16	53.50
30	50	16	57.50
30	60	16	63.50
36	60	20	90.50
36	72	20	110.50

FIG. 33—WADE ACCESSIBLE FLUSHING CLEAN-OUT EXTRA HEAVY CAST-IRON BLOW-OFF CATCH BASIN. For Steam Plants, made with hubs or flanges.

Diameter	Depth	Price
16	30	\$24.00
20	26	24.00
20	30	28.00
24	30	32.00
24	36	36.00
24	42	40.00
24	48	44.00
30	36	45.00
30	48	50.00
30	60	60.00
30	72	80.00
36	36	60.00
36	48	70.00
36	60	85.00
36	72	100.00

FIG. 38—WADE ACCESSIBLE FLUSHING CLEAN-OUT EXTRA HEAVY SECTIONAL CAST IRON BASIN. Can



FIG. 31



FIG. 32



FIG. 33



FIG. 38

be built to any depth by adding sections. Also may be economically used for sink, grease, gravel, roof, floor drains, bilge pumps or similar purposes.

Inside diameter 30 inches, height from bottom of basin to top of cover, 47 inches, and consists of four sections and cover. Cover is 20 inches in diameter and is bolted to ring, with gasket absolutely water- and gas-tight. Upon special order will furnish additional sections to reach any depth or surface, and will place larger or smaller size hubs on body of basin where required. Hubs are for 4-in. or 6-in. cast-iron and vitrified clay pipe. Basin is provided with four hubs, the outlet hub is a double hub, in which Wade Clean-out Hinge Door Deep Water Trap Seal Bend may be installed at will. Always connect pressure water to flushing jet to flush and clean interior of basin and drains. We also manufacture 36-in., 48-in. and 60-in. diameter sections. Prices on application.

PRICE LIST, IN SECTIONS.

Bottom section, diameter 30 in., depth 9 in.	\$10.50
Two plain sections, diameter 30 in., depth 9 in.	17.00
Hub section, diameter 30 in., depth 14 in.	14.00
Cover, size ring 34 in., manhole 20 in.	9.00

Complete basin, 4 sections.....\$50.50
Additional sections can be added.

Pressure water should always be connected to flush jet to clean interior of basin and drain.

FIG. 40—WADE EXTRA HEAVY MANHOLE RING AND CORRUGATED IRON COVER.

Size of Ring, 34".
Size of Cover 20".
Price, \$10.00.



FIG. 40

FIG. 52—WADE FLOOR DRAIN EXTRA HEAVY CAST-IRON BASIN. For Garages, Stables, Factory, Schools, Hospitals, Fire Houses, and any floor where drainage is required.

PRICE LIST.

Diameter	Depth	Price
16	24	22.00
16	30	27.00
20	26	27.00
20	30	31.00
20	36	35.00
24	24	33.00
24	30	35.00
24	36	39.00
24	42	43.00
30	42	50.00
30	60	60.00

Upon special order will furnish mud pan interceptor, which prevents lint and such substances from going out and clogging main drain.



FIG. 52

PLATE A-126—THE WADE ACCESSIBLE FLUSHING CLEAN-OUT FLOOR WASH AND BACK-WATER GATE VALVE COMBINATION—Section showing Gate Valve attached—Fills the demand which is now so insistent for a floor drain to be placed in floors of water-closet rooms, lavatories, wash-rooms, in toilet rooms for public use, in hospitals, garages, school lavatories and interior play rooms, hotel kitchens, clubs, restaurants and in every other place where floors and walls are washed and in rooms used for the manufacture and packing of food products on a large scale.

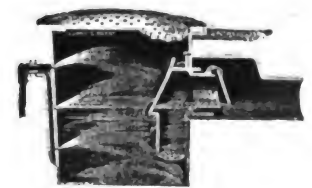


PLATE A-126

Diameter	Depth	Perforated Cover	Outlet	
8 1/2"	10"	12"	2"	\$12.00
8 1/2"	10"	12"	3"	14.00
10"	12"	14"	3"	15.00
10"	12"	14"	4"	18.00
12 3/4"	15 1/2"	14"	4"	22.00

List does not include pipe work.

Diameter	Depth	Perforated Cover	Outlet	
8 1/2"	10"	12"	2"	\$9.00
8 1/2"	10"	12"	3"	10.50
10"	12"	14"	3"	12.00
10"	12"	14"	4"	14.50
12 3/4"	15 1/2"	14"	4"	18.50

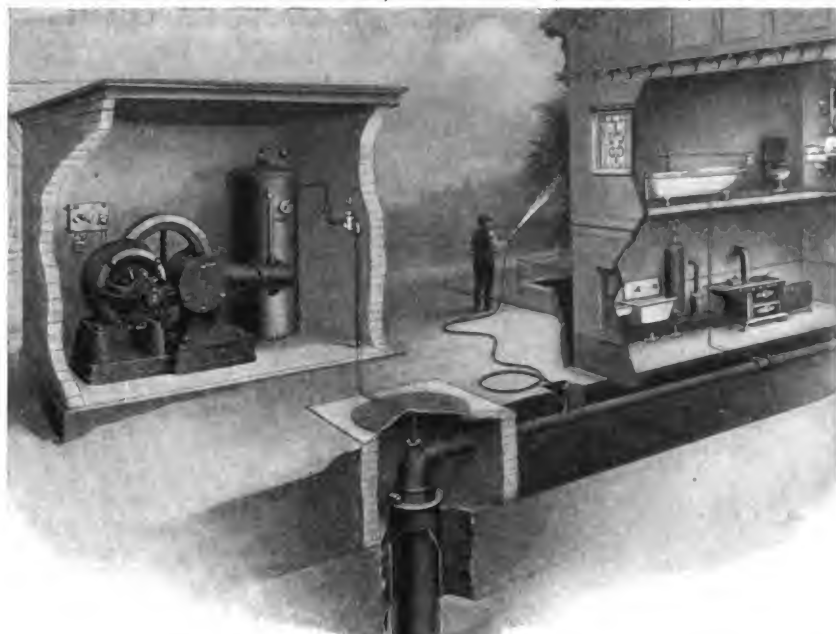
Outlet threaded for wrought iron pipe.

Send for Catalog of our Patent Back-Water Gates, Iron Catch Basins, Floor Drains, etc.

Weber Subterranean Pump Co.

90 WEST STREET
 NEW YORK

COMPLETE DIRECT-CONNECTED, ELECTRICALLY-OPERATED POWER PLANT



PRODUCTS — SUBTERRANEAN PUMPS, POWER PLANTS, AIR RECEIVERS, COMPRESSORS

DESCRIPTION — Our Suburban Type of Subterranean Pump is operated by compressed air and designed to meet the requirements of suburban residences, estates, hotels, factories, etc., for domestic, barn, garden and fire purposes. It is applicable to artesian and ordinary wells, water cisterns, lakes, etc.

Compressed air is used to force the water from its source to the surface of the ground or *directly* to any desired height without the use of a secondary pump. We do not use elevated storage or compression tanks. The water is delivered directly to the faucet from the well under a predetermined and adjustable pressure. It is **automatic in operation**. Distance and location of water source and of compression plant from the building are of no consequence. The opening of faucet starts the pump, and

the pump stops as soon as the faucet is closed.

The only moving parts under water are two bronze ball valves of standard pump design. Standard pipe and special bronze fittings constitute the other parts that are put into the well and **no floats are used in connection with this system**. The controlling valve may be located in the most accessible place, and does not require oiling or special attention.

COMPLETE INSTALLATION—This consists of the pump and special fittings, a motor, an air compressor, air receiver and piping.

The compressor may be direct-connected or belt-driven, operated either by electricity, gas, oil or hand power. An electrically operated plant, which is considered the most economical and flexible, is equipped with automatic starting and stopping device.

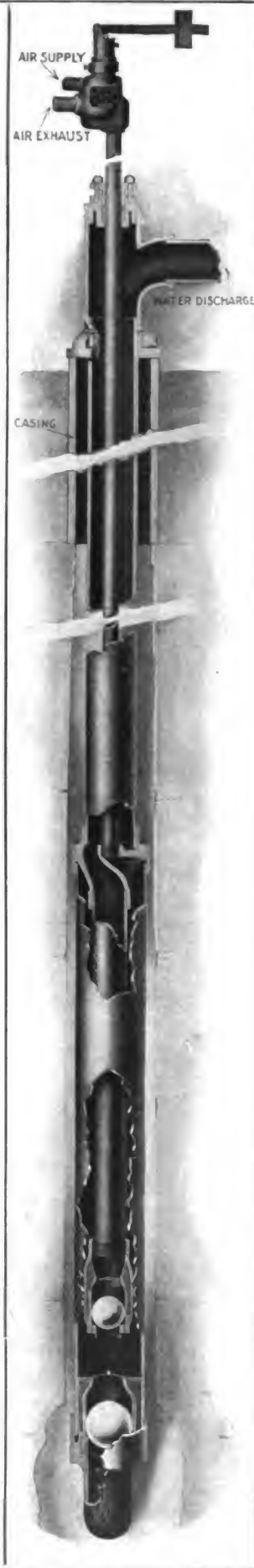
MATERIAL AND WORKMANSHIP—The workmanship and material of our pump and fittings being of the highest quality, we recommend only the best types of air compressors and motors suitable to the conditions in each particular case. In order to insure an entirely satisfactory installation we are prepared to install **complete plants**, so that no difficulties may arise from assembling of the different parts purchased from a number of dealers and manufacturers.

AIR RECEIVERS

Equivalent water storage in well, in gallons, without recharging the air receiver—initial air pressure 100 pounds; for lifts from 10 to 200 feet above pumping water level

Size and Weight				Lift in Feet—above Pumping Water Level												
Diameter Inches	Height Feet	Weight Pounds	Gallon Contents	10	25	40	50	60	80	100	125	150	175	200		
12	5	200	30	150	105	88	63	54	40	30						
18	5	370	66	330	231	171	138	119	88	66						
20	5	400	82	410	285	213	172	147	110	82	54					
24	5	495	118	590	412	306	248	213	158	118	79	52				
24	6	565	141	725	493	366	296	254	189	141	94	62				
30	5	635	184	920	645	478	388	332	247	184	123	81	51			
30	6	720	240	1200	840	625	505	432	322	240	160	105	67			
30	7	820	277	1385	970	720	580	500	371	277	185	123	77	41		
36	6	890	317	1585	1110	822	665	570	425	317	212	139	89	48		
36	7	1010	370	1850	1300	960	776	665	495	370	248	163	103	56		
36	8	1110	423	2115	1480	1100	890	764	568	423	284	186	118	63		
36	10	1325	528	2640	1850	1370	1110	950	708	528	354	232	148	79		
42	8	1315	576	2880	2020	1500	1210	1040	772	576	386	254	161	86		
42	10	1575	720	3600	2520	1870	1510	1300	965	720	480	316	202	108		
48	15	3800	1410	7050	4940	3680	2960	2540	1890	1410	945	620	395	212		
60	18	7500	2643	13215	9260	6880	5560	4760	3540	2643	1770	1162	742	397		
66	20	9100	3554	17770	12400	9250	7470	6400	4760	3554	2380	1560	995	534		
72	20	10600	4230	21150	14800	11000	8900	7600	5660	4230	2840	1860	1182	635		

Hydrostatic test, 170 pounds; working pressure 110 pounds; furnished with pressure gauge safety valve and drip cock.



SINGLE-STAGE, SINGLE-WELL TYPE PUMP

"A.B.C." SYSTEMS

W. & B. Douglas

Manufacturers of Pumps of Every Description

MIDDLETOWN, CONN.



N. Y. Office
83 JOHN STREET
Works
MIDDLETOWN, CONN.

PRODUCTS—Every Variety of Pumps, as follows:
HAND, Diaphragm, Double-Acting, Deep-Well, etc.;
POWER, Electric, Gasoline, etc.; PNEUMATIC TANK OUT-
FITS; DUPLEX AND TRIPLE-ACTING; WORKING HEADS,
POWER; ROTARY, CENTRIFUGAL, Vertical, Horizontal, etc.
TREE-SPRAY; ARTESIAN WELL, AND CYLINDERS;
HYDRAULIC RAMS; BILGE; SUMP; PRESSURE, ETC.

PRESSURE TANK OUTFITS—We manufacture many varieties of Hydro-Pneumatic Pump Outfits (Pressure-tank System) adapted particularly for installation for Country Club Houses, Suburban Hotels, Residences, Bungalows, etc. The conveniences of the city are by our products brought to the door of the rural resident.

The majority of these installations require individual engineering, and our capable staff of engineers will efficiently and promptly estimate and advise without charge in all cases in which we are consulted. Inquiries, with answers to the items stated below, will receive our immediate attention.

Data required in Hydro-Pneumatic Water Supply: 1—Gallons used daily; 2—Source of water supply; 3—If a well, depth and diameter; 4—Height of buildings; 5—Kind of electric current.

Fig. 626 illustrates an apparatus of this description with our Double-Acting Horizontal Pump directly connected to electric motor by our "Noiseless" Transmission Drive. Capacities 75 and 150 gallons per hour. It can be worked by a hand-operated air inlet, or hand or power air pump. Suction Lift is 20 feet. This is an ideal outfit where electric power is available.

ELECTRIC HOUSE PUMP—Fig. 468 is our regular outside-packed Electric Triplex Pump, direct-connected to motor by means of a worm reduction gear. It is wired for Automatic Tank Service, the tank being in the upper story of the building. This pump works automatically and is practically noiseless. An enclosed float switch inside the tank communicates with the motor and starts it, thus refilling the tank whenever the water falls below its normal level.

"A.B.C." SYSTEMS

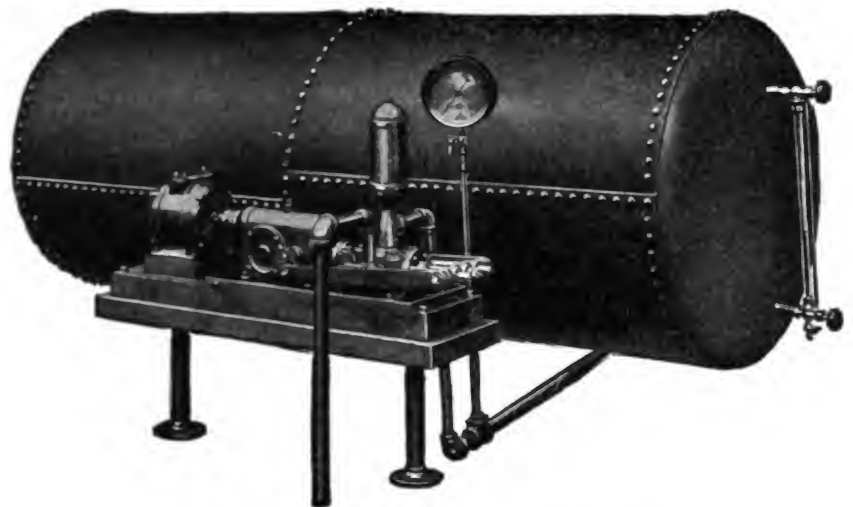


FIG. 626.—HYDRO-PNEUMATIC PUMPING OUTFIT
Made in four sizes

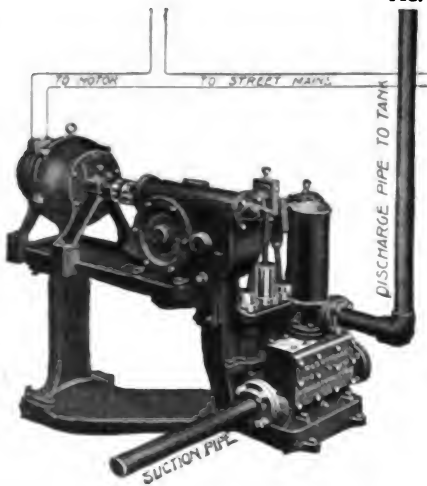


FIG. 468.—ELECTRIC TRIPLEX PUMP AS
WIRED FOR AUTOMATIC TANK SERVICE

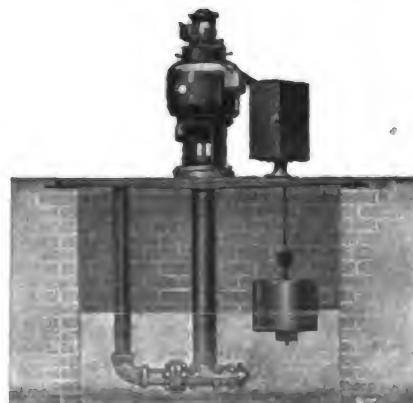


FIG. 506.—ELECTRIC SUMP PUMP

See table below for details and capacities of Fig. 468:

Size	Rev. per Minute	Gals. per Hour	Elevation in Feet	H. P. of Motor	Diam. of Suction	Diam. of Disch.
2 x 3	50	375	100	1/2	1 1/2	1 1/2
2 x 3	50	375	200	1	1 1/2	1 1/2
3 x 4	50	1000	100	1	2	1 1/2
3 x 4	50	1000	200	2	2	1 1/2
4 x 4	50	1900	125	2	2 1/2	2
4 x 6	50	2800	200	5	2 1/2	2

SUMP PUMP—Our Douglas Vertical Submerged Centrifugal Pump was especially designed by us for elevating drainage water and sewage matter (liquid and solids) when same happen to be collected below the sewer level. The illustration shows our bearing located at the level of the Sump-pit cover, that point being easy of access and free from water, etc. Our standard construction is 42 inches from water inlet to top of cover. When pit is deeper, a piece of pipe of sufficient length may be attached, or length of pump shaft and tube increased.

The entire outfit is accessible; no priming is required, as pump is always submerged. Inquiries should contain full information as to local conditions.

Thomas & Smith, Inc.

Manufacturers of "Economy" Pumping Equipment

416 BROADWAY
NEW YORK, N. Y.

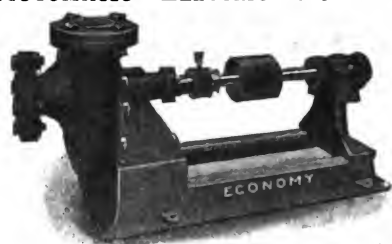
Representatives in all large Cities

116-118 N. CARPENTER STREET
CHICAGO, ILL.

PRODUCTS—ECONOMY CENTRIFUGAL PUMPS, Single and Multi-Stage; TRIPLEX PUMPS for Sprinkler and Domestic Service; PLUNGER PUMPS, Shallow and Deep Well; DEEP WELL IMPELLER PUMPS, DEEP WELL WORKING HEADS, HOT-AIR PUMP-ING ENGINES

VACUUM CLEANING APPARATUS, AUTOMATIC ELECTRIC FIRE PUMPS, AUTOMATIC ELECTRIC HOUSE PUMPS AND WATER SYS-TEMS, AUTOMATIC ELECTRIC PROTECTED TYPE BILGE PUMPS, AUTOMATIC ELECTRIC DUPLEX BILGE PUMPS, AUTOMATIC

STEAM - DRIVEN BILGE PUMPS, AUTOMATIC AND NON-AUTOMATIC CELLAR DRAINERS, AUTOMATIC SEWAGE EJECTORS, AU-TOMATIC CONDENSATION PUMPS AND RECEIVERS



No. 2115
"ECONOMY" CENTRIFUGAL PUMP

Belted centrifugals are also made for any ca-pacity at any head. With any "Economy" pump there is a saving in power and mainte-nance. Any "Economy" centrifugal can be fur-nished in brass or any other composition. Such pumps are adapted for breweries, tanneries and places where the liquid would affect iron.



No. 2129
"ECONOMY" AUTOMATIC CONDENSATION PUMP AND RECEIVER

Built in two sizes, as follows:

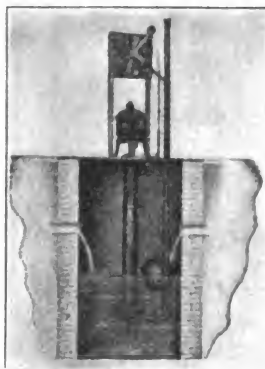
No. of Unit	Ft. of Radiation	H. P. 10 lb. 3-phase	Re-quired Boiler 1-phase	Against Pres-sure D.C.
1	10,000	1	1	$\frac{3}{4}$
2	45,000	2	2	$1\frac{1}{2}$



No. 2132
"ECONOMY" CENTRIFUGAL PUMP

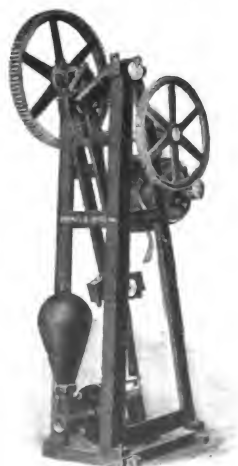
Direct connected through an insulated flexible coupling to an electric motor. "Economy" Centrifugals are made in single and multi-stage for any capacity at any head. They are of the highest grade, having machined parts and casings, and are being efficiently used for pumping liquids containing large percentages of solids. These pumps are also built for dredging and mine work.

"A.B.C." SYSTEMS



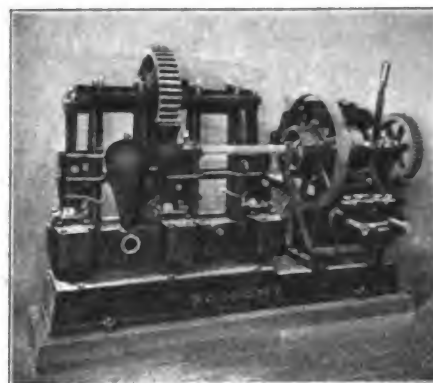
No. 2104
THE "ECONOMY" AUTOMATIC BILGE PUMP OR SEWAGE EJECTOR

Made for any capacity at any head. Either single or duplex ar-rangement for the Submersible or Dry Basin Type. They are also used for other purposes, such as pumping various liquids from re-torts, cisterns and tanks.



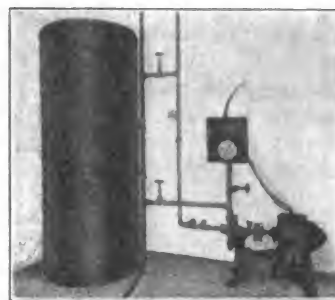
No. 2128
"ECONOMY" DEEP WELL WORK-ING HEAD

Motor Driven Type. Furnished with pipe connections either above or below base plate. Also furn-ished for belt drive.



No. 2125
"ECONOMY" SPRINKLER FILLING PUMP AND COMPRESSOR

A Triplex Pump, an Air Compressor and an Electric Motor, all built on one base making a self-contained unit. Approved by the Chicago Board of Underwriters.



No. 2135
"ECONOMY" SYSTEM OF AUTOMATIC WATER SUPPLY

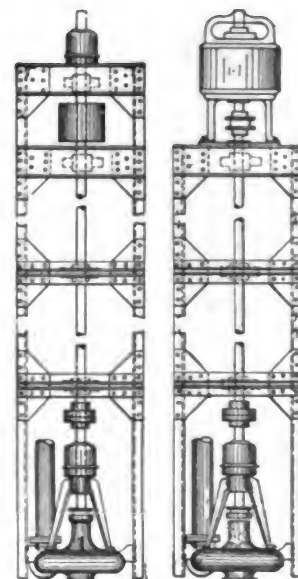
Automatic Electric Compression System con-sisting of an "Economy" Centrifugal Pump, Automatic Switch and Tank. This system is ideal and is becoming very popular with those requiring added pressur on the water supply.



No. 2138
"ECONOMY" AUTOMATIC CELLAR DRAINER

Utilizes the city water to pump Seep-age Water out of a catch basin by sy-phoning the Seepage Water at the strainer. The float opens and closes the valve by the rising or lowering of the water in the basin.

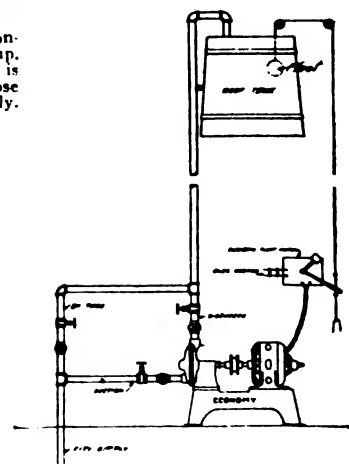
Write for complete set of suggestive specifications covering the entire line of "ECONOMY" Pumping equipment, embodying all of the above and many others. They will be instructive and of assist-ance to Architects and Engineers.



No. 2126 No. 2130
"ECONOMY" VERTICAL CEN-TRIFUGAL PUMP

Belted type and direct connected motor driven type with structur-al steel frame.

These units are designed es-pecially for irrigating and con-struction service. They are made especially durable and simple. Furnished for any capacity and for various depths. Although both illustrations show structural steel frame-work, they may be furnished without same for in-stalling with wooden frame-work.



No. 2140
AUTOMATIC ELECTRIC ROOF TANK OUTFIT

Consisting of "Economy" Centrifugal Pump, Float, Cable and Switch to control the operation of the pump by the rise and fall of the water in the tank.

Des Moines Bridge & Iron Company

Manufacturers of and Contractors for

**Bridges, Structural Steel for Buildings, Water Towers, Derricks,
Tanks, Stand Pipes and Plate Work**

PITTSBURGH, PA., 989 Curry Bldg.
DALLAS, TEX., 416 Praetorian Bldg.
CHARLOTTE, N. C., 510 Realty Bldg.

SHOPS
PITTSBURGH, PA.
DES MOINES, IOWA

DES MOINES, IOWA, 988 Tuttle St.
DENVER, COLO., Boston Bldg.
SAN FRANCISCO, CAL., Monadnock Bldg.

PRODUCTS—WATER TOWERS, STAND PIPES, GAS HOLDERS, OIL TANKS, STEEL BARGES, DERRICKS, CRANES, BRIDGES, ROOF TRUSSES, STRUCTURAL STEEL for Buildings, FIRE ESCAPES, STEEL SMOKE STACKS, AND COMPLETE WATER WORKS PLANTS

ILLUSTRATIONS—The cuts herewith show two of our standard hemispherical-bottom steel tanks and towers. These tanks are the most economical for the storage of water, either for water works or sprinkler purposes. They do not leak, burn up or burst, as wood tanks are apt to do. They may safely be constructed over buildings for sprinkler supply tanks. We prefer, however, a separate steel tower where room is available.

We have built several hundred of these tanks distributed all over the United States, Canada and Mexico.

Our factory at Pittsburgh enables us to compete in any market. We make a specialty of the Tank and Tower business.

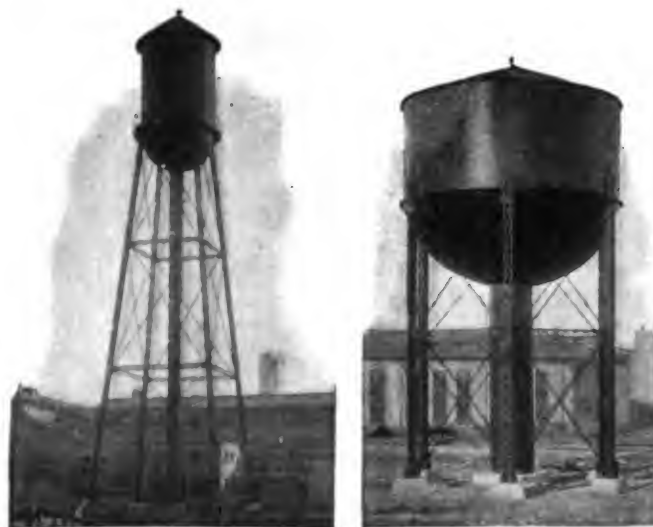
Write for our Special A. B. C. Catalog.

FOR ESTIMATING—Architects or Engineers desiring one of our slide rule calculators for determining sizes of beams and design of steel tanks will be furnished one free of charge upon application, mentioning the "A. B. C. Catalogs."

DESCRIPTION—Where it is desired to have only small variation in the pressure as the water is being used from the tank, we use our Railway Design tank, which has about 25% greater diameter than the standard tank and, consequently, much less depth of water.

We frequently use a large steel

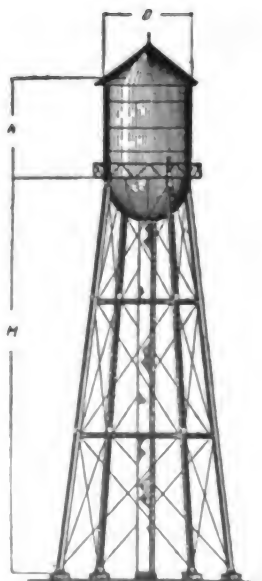
"A.B.C." SYSTEMS



ROCHESTER, N. Y.
Height, 139 ft.; Capacity, 100,000 gals.
For a sprinkler system.

RAILWAY WATER TOWER
Height to top, 51 ft.; capacity,
100,000 gals. For Northern
Pacific Railway.

DIMENSIONS OF OUR STANDARD TANKS



Capacity in Gallons	Diam- eter, Feet	HEIGHT	
		Feet	Inches
10,000	11	10	0
15,000	12	14	0
20,000	13	16	0
25,000	14	17	0
30,000	15	18	0
35,000	16	18	0
40,000	17	18	0
45,000	17	21	0
50,000	18	20	4
55,000	18	23	0
60,000	19	22	0
65,000	19	24	4
70,000	20	23	0
75,000	20	25	3
80,000	21	24	0
90,000	21	27	9
100,000	22	28	0
125,000	24	29	0
150,000	25	32	6
175,000	26	35	5
200,000	28	34	1
250,000	30	37	4
300,000	32	39	3

We have drawings and templates and carry a stock of materials for all sizes up to and including 100,000 gallons capacity. Rule for finding distances, center to center of foundations, at tops of cap stones:

$$\text{Square} = 707D + 2H + 1\frac{1}{4}'' \quad \text{Diagonal} = D + .2828H + 2\frac{1}{2}''$$

riser pipe instead of the smaller inlet pipe, and frost casing about it. The large riser also serves as a settling basin, and a blow-off valve is provided at the bottom of the riser.

Our hemispherical tank bottoms are formed cold in hydraulic presses. Heating or hammering of bottom plates should not be allowed.

Four posts are sufficient to support tanks up to 200,000 gallons capacity.

In writing for prices state whether the height given is to the top of the tank or to the bottom of the capacity given; also what accessories it is desired that the manufacturer of the tower shall furnish.

SPECIFICATION DATA—The foundations should be furnished by the purchaser, built from plans and specifications furnished by the manufacturer.

It is customary for Architects and Engineers to specify a hemispherical-bottom steel tank of the desired capacity and indicate the height to either the top or bottom of the capacity, and to require the manufacturers to submit designs having a factor of safety of four, using the following unit stresses:

Compression members under 90 radii, 12,500 lbs. per sq. in.; over 90 radii (17,600-57 $\frac{1}{2}$) lbs. Tension members, 15,000 lbs.

Bearing values: Rivets, 15,000 lbs. per sq. in.; Pins, 20,000 lbs. per sq. in.; Cap Stones, 400 lbs. per sq. in.; Masonry, 125 lbs. per sq. in.; Good clay, 20 lbs. per sq. in.

Specify Medium Steel for tower, and Railway-Bridge Steel for tank.

Wm. B. Scaife & Sons Company

Manufacturers of "Scaife" Water Filters

221 FIRST AVENUE
 PITTSBURGH, PA.

PRODUCTS—"SCAIFE" PATENT CAST-IRON SAND AND CHARCOAL WATER FILTERS; STEEL QUARTZ WATER FILTERS

DESCRIPTION—We describe herein two styles of Water Filters which cover the needs of a large class of buildings: First-Cast-Iron Sand and Charcoal Filters, which are used in residences where the entire house supply is to be filtered; Second-Steel Quartz Filters, for use in public buildings, schools and factories, where a great quantity of water is consumed daily.

SCAIFE SAND AND CHARCOAL FILTERS—Scaife Sand and Charcoal filters are designed to meet every domestic requirement. They are made in three sizes, with brass pipe and fittings; also have brass conical strainers for washing purposes. In the Double Filter the water first passes through a quartz cylinder and then through a pure animal charcoal cylinder. This process is thoroughly sanitary because the charcoal cylinder is never in direct contact with the unfiltered water supply, and the arrangement is such that each cylinder is cleaned with filtered water furnished by the other.

Where economy is a necessity and only a small quantity of water is to be filtered, our Single Cylinder Filter, in cast iron, can be substituted. It contains both quartz and charcoal and costs about one-half the price of the double.

SCAIFE STEEL QUARTZ FILTERS—

These are designed for public buildings and industrial establishments, and are made in six sizes. They are composed of two separate boiler-plate steel cylinders supported on legs, furnished complete with strainer plate and with the "Scaife" patent improved brass conical strainers for washing purposes. They are used either single or double, with all the pipe work, filling, etc., ready to set up and connect, and are especially adapted for buildings using from 3,000 to 25,000 gallons of water per hour, under working pressures of 100 pounds and upwards.

Consult price list and specifications for further information.

SPECIFICATION FORM FOR ARCHITECTS, ENGINEERS—
 Furnish and set up where shown on plans one pair of Filters (give size) and specify either the "Scaife" Vertical Pressure, cast-iron, Sand-

"A.B.C." SYSTEMS

PRICE LIST AND SIZES OF "SCAIFE" SAND AND CHARCOAL FILTERS FOR RESIDENCES, ETC.

Dimensions Diameter x Height	Size of Supply Pipe	Shipping Weight, Pounds	Approximate	
			Capacity Gals. per Hour	Cost
Two 16" x 4'	1"	1,300	500	\$200.00
Two 20" x 4'	1 1/4"	2,000	1,000	300.00
Two 24" x 4 1/2'	1 1/2"	3,000	1,800	400.00

"SCAIFE" STEEL QUARTZ FILTERS FOR PUBLIC BUILDINGS

Two 30" x 6 1/2'	2 1/2" & 3"	6,200	3,000	\$600.00
Two 36" x 6 1/2'	3"	9,600	5,000	800.00
Two 42" x 7 1/8'	3 1/2" & 4"	12,000	7,000	1,000.00
Two 48" x 7 1/8'	4"	15,000	9,000	1,200.00
Two 60" x 7 1/2'	5"	22,000	12,000	1,600.00
Two 72" x 8'	6"	32,000	15,000	2,000.00

Discounts and larger sizes quoted on application.



"SCAIFE" SAND AND CHARCOAL FILTER



"SCAIFE" STEEL QUARTZ FILTER

and-Charcoal, non-coagulant Water Filter to withstand 100 lbs. working pressure, and furnished complete with strainer plate and a complement of brass conical strainers; or, the "Scaife" Vertical Pressure Steel Quartz Filter, made of boiler plate, to withstand 125 lbs. working pressure and to have manhole on side, hand-hole in top and clean-water chamber in bottom, and to be supported on legs and equipped with a strainer plate and a complement of brass conical strainers.

Provide all necessary pipe, fittings and valves and make all connections required for supply, discharge, by-pass, waste and drainage (specify galvanized iron or brass for first filter mentioned and plain wrought iron, galvanized iron or brass for the second) necessary for the operation and control of the filters, all according to Manufacturer's printed directions to be furnished. To be so arranged that one cylinder can be cut out and the other left in operation, also that each cylinder will be washed with filtered water from the other.

The contractor shall make the supply and waste connections required as shown on the general drawings; also, he shall submit detail lay-out drawing and furnish complete specification and guarantee for the Architect's approval.

Also provide and connect to supply-line for filters a suitable size coagulant tank (if desired), with convenient access and arranged to feed the coagulant automatically.

NOTE—The above capacities of Steel Filters are based on filtering water which is not very turbid or muddy, under a pressure of 60 to 75 lbs., at the rate of 5 to 6 gallons per square foot of filtering surface per minute. Where the supply is turbid, specify the next larger size of filter to get the listed capacity of good water. When using a coagulant, the listed capacities are correct for turbid water.

Atlantic Filter Company

Manufacturers of Paddock Water Filters

315 WHITE BUILDING
BUFFALO, N. Y.

PRODUCTS—PADDOCK SINGLE AND DOUBLE WATER FILTERS

FILTERS A NECESSITY—The advantages of a supply of pure drinking water are too well recognized to need much argument. The injurious effects of impure water upon the general health of every one and upon the endurance powers of the hard workers in shop and mill are generally known. Pure wholesome water filtered clean of dirt, vegetable fungus and animal disease germs is a necessity everywhere.

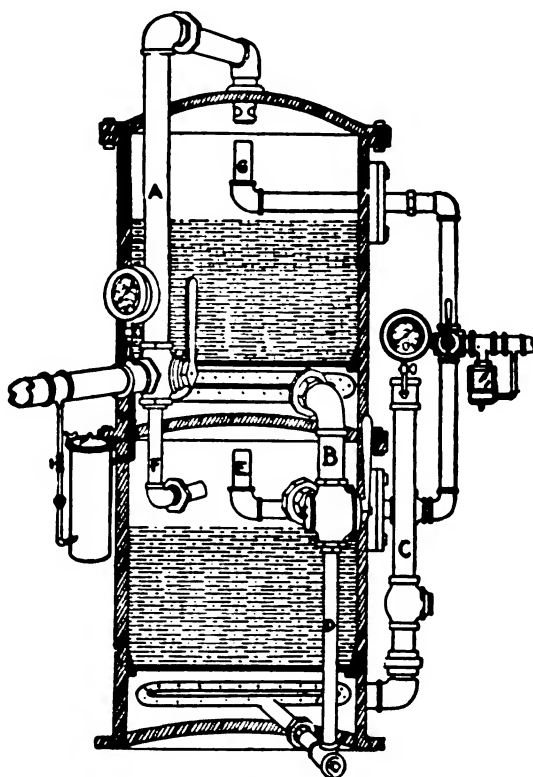
To obtain such water from the usual public supply we must have recourse to **Filters**. Of these there are many, and care should be exercised to select a type which will not only thoroughly purify the supply, but which can also be *easily and properly cleaned*. Long experience and careful study have produced the "**Paddock Water Filter**," which in every way meets all the requirements of a thoroughly reliable apparatus.

Responsible references to many architects and satisfied users.

TECHNICAL DESCRIPTION—"Paddock Double Water Filters" are made in two sections, one placed above the other, each section having a filter bed and an upper and lower water chamber. The smaller sizes are made of cast iron and the larger ones of boiler plate. All iron parts are concrete-covered and copper parts tin-plated. The screen is made of copper wire, tin-plated before woven. This wire screen is bolted between two heavy perforated plates.

FILTERING MEDIUM—

Emery is used as the filtering medium owing to its superiority over others in weight, hardness, roughness and durability. The beds are about 15 inches deep and are made up of three



PADDOCK DOUBLE WATER FILTER.

different sizes of emery, Nos. 20, 40 and 60.

THE PADDOCK VALVE is made of all brass, with plug held in place by a spring under cap on rear end of valve, with the stem coming out of the small end of the valve, packed with a stuffing box.

CLEANING—With this make of filter cleaning is a very simple operation; it is thoroughly effected by turning the pointers on the levers to the letters on dial of valve, as directed by the plate attached to filter.

In cleaning lower filter, water enters pipe A, filters through upper filter, passes down through pipe D to lower water chamber and up through filter bed, washing dirt out through pipe E to waste.

In cleaning upper filter, water enters pipe F, filters through lower filter, passes up through pipe D to lower chamber of upper filter and washes dirt out through pipe G to waste.

OPERATION—When the filter is in operation the water enters pipe A, passes down through the upper filter bed, through pipe B to lower filter, and down through lower bed and out through pipe C to building.

TABLE OF MEASUREMENTS

No.	Supply Pipe	Inside Diameter	Gallons per Minute, 35 Lbs. Pressure	Height Over All	Shipping Weights, Lbs.	Diameter Over All in Inches
1	1"	13"	5 to 11	6'	900	24
2	1¼"	16"	7 to 14	6'	1,300	27
3	1½"	10"	10 to 20	6'	1,900	30
4	2"	25"	15 to 30	6' 4"	2,800	37
5	2½"	32"	24 to 48	6' 6"	4,500	45
6	3"	39"	35 to 70	6' 10"	6,500	54
7	4"	52"	65 to 130	7' 9"	9,000	68
8	5"	65"	100 to 200	8' 9"	12,000	78

GUARANTEE—We guarantee to remove from 95 to 99% of disease germs, and all discoloration.

We also guarantee to replace, free of charge, any broken or defective parts that may appear within two years.

SPECIFYING—When specifying Paddock Filters refer to number in first column of table of measurements.

Loomis-Manning Filter Distributing Co.

828 LAND TITLE BUILDING
 BROAD AND CHESTNUT STREETS

Established 1880

Factory: 24th and York Streets

32d Anniversary

PHILADELPHIA, PA.

Branch Offices and Salesrooms

NEW YORK, 9203 Metropolitan Life Tower, 1 Madison Avenue
 BOSTON, 440 Exchange Building, 53 State Street
 CHICAGO, 712 Marquette Building, Adams and Dearborn Streets

BALTIMORE, 603 Calvert Building, Fayette and St. Paul Streets
 BUFFALO, 15 Ellicott Square Building
 WASHINGTON, 306 Colorado Building, 14th and G Streets, N. W.

PRODUCTS—THE LOOMIS-MANNING FILTER; PRESSURE AND GRAVITY FILTERS; FILTER PLANTS of all Capacities; FILTER EQUIPMENT; DISTILLING AND STERILIZING PLANTS; QUARTZ, ANIMAL CHARCOAL, SAND, SULPHATE OF ALUMINA, AND ALUM, for Filtration Purposes and for the Preparation, Purification and Cleansing of all Water Supplies for all Purposes to render the Water bright, clean and free from all deleterious Matter, Color, Taste and Smell

THE FILTER—The Loomis-Manning Filter is the outcome of thirty years' scientific study, practical application, experience and skill.

ITS APPLICATION—It insures pure water for public buildings, hotels, public and private institutions, hospitals, clubs,

all points and for all purposes bright, sparkling, clean water, instead of dirty water which spoils everything it comes in contact with.

ESSENTIAL FEATURES—There are four essential features to be taken into consideration when filters and filtration machinery are under consideration. They are:

First—**Efficiency** in construction whereby the ability of a Filter to thoroughly cleanse or wash its filtering material or bed is clearly demonstrated, this being a feature of economy. Without this, other features are worthless. This point we demonstrate in our filters through model in glass.

Second—**Substantial** construction to reduce the cost of main-



STYLE "M" 67-127



STYLE "SPECIAL" 104-124



STYLE "M" 64-124

TYPES OF LOOMIS-MANNING FILTERS

schools, colleges, apartment houses, office buildings, town houses, country houses, farms, etc.; also for mills, dye and bleach works, boiler plants, sugar refineries, paper mills, breweries, laundries, bottling establishments, public water supplies, etc.

ITS VALUE—It prevents all diseases due to impure water, such as typhoid fever, cholera, diarrhea, and other intestinal troubles.

It increases the value of any product where water is used in any way in the process of manufacture.

It conserves the health of employees, a vital question with all employers of labor.

It protects all plumbing, plumbing fixtures, tanks, boilers, brass valves, bibbs, and elevator machinery, and it presents for use at

tenance. Nine years' service of our filters in the Hotel Manhattan and the Hotel Buckingham in New York without repair is a sufficient guarantee of their substantial construction showing no cost for maintenance.

Third—**Simplicity** of construction. This we have obtained to a very high degree through the use of the Loomis-Manning Cutting and Confining Plates and the Manning Single Controlling Valve. These eliminate the use of the antiquated methods of cleaning, such as rakes and similar agitators, and the confusion of many valves generally used in operation of filters.

Fourth—**Attractive** construction. This point is well covered in the Loomis-Manning Filters by their pleasing ensemble. By the use of a glass working model ocular demonstrations are possible, which we gladly give, and invite those interested to take advantage of, when the subject of filtration is being considered.

"A.B.C." SYSTEMS

Continued on next page

QUALITY OF MANUFACTURE—Only the very best materials enter into the construction of the various sizes and styles of the Loomis-Manning Filters, such as gray-iron loam castings, gunmetal and brasswork in valves, tinned-copper perforated diaphragms, best grades of galvanized wrought-iron pipe or seamless tinned brass tube, galvanized malleable-iron fittings or tinned red-brass fittings, etc.

No expense is spared to produce with skilled mechanics an efficient and handsome as well as practically indestructible machine. The service of thirty years in the White House, Washington, D. C., demonstrates this feature.

OPERATION—The Manning Single Valve controls the operation of the Filter, and by the movement of its operating lever through the distance of an eighth of a circle, over the plane of its graduated dial, any desired action of the Filter may be obtained, such as: **Filtering, Filtering to Waste, Washing Filter Bed or By-Pass Action.**

GLASS MODEL—We are the only manufacturers who exhibit by glass model the complete working of a Filter. We show thereby the operation of intercepting the refuse and suspended matter, and producing from the contaminated and unclean current the purified, sparkling stream; also, showing the method of cleaning the Filter, which is the simplest and most perfect known.

COAGULATION WHEN REQUIRED OR DESIRED—We control the only method known of feeding coagulants *indirectly* in preparing water for filtration. All of our Filters which are designated by the numeral or figure "7" are equipped with either our *direct* or *indirect* method of feeding a coagulant, or with both.

CAPACITIES—From one gallon per minute to as many thousand gallons per minute as the requirements of any supply desired might indicate. Correspondents should state number of gallons desired per minute, per hour, ten hours, or twenty-four hours; also source and average condition, as well as the general characteristics of the water.

STYLES AND SIZES—Various styles and sizes are on exhibition at our many salesrooms.

PRICES—Prices furnished upon application.

Owing to the great variety of and the many different conditions under which water is supplied it is impossible to issue a standard price list; for the filter, which is calculated under *average* conditions to produce a certain quantity per minute, may, under certain conditions, produce only half that quantity.

"A.B.C." SYSTEMS

SPECIFICATIONS—Filter Plants for large supplies should be divided into two or more units, and the number of gallons required for each unit per minute, per hours, per ten, twelve or twenty-four hours, should be clearly given.

ESTIMATES—We shall be pleased to have our engineers prepare plans and specifications for any desired supply of water or requirement of construction; also, estimates for complete Filter Plants, both pressure and gravity systems, large or small, will be promptly furnished.

OFFICES—We invite everyone interested in the object of filtration to call at any of our Salesrooms and examine the working model.

Competent men in attendance will fully explain our system, and give any desired information. Or, we should be pleased to call by appointment at the residence or office of our correspondents with a glass-model filter to show how perfectly our apparatus cleanses itself. This demonstration requires but from ten to fifteen minutes.

DETAILS—All Single-Cylinder Loomis Filters are designated Style "L."

All Double-Cylinder or Tandem Loomis Filters are designated Style "M."

All Loomis Filters in Batteries of two cylinders are designated Style "Special."

All Loomis Filters *without* Coagulant Feeding Attachment are designated by numbers ending in figure "4."

All Loomis Filters *with* Coagulant Feeding Attachment are designated by numbers ending in figure "7."

All Loomis Filters contain, as filtering medium, boneblack or flint, or quartz, or polarite, or the most efficient combination of these materials.

STOCK—We carry in stock all sizes and styles, ready for immediate delivery or shipment.

We also carry a full stock of all sizes of Manhattan Steel-Tank Filters ready for immediate delivery or shipment.



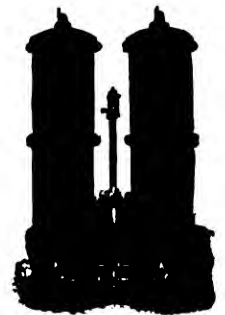
STYLE "L" 67-127



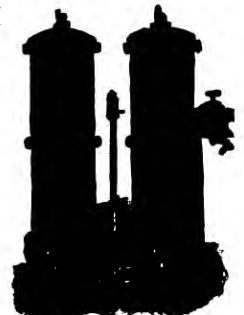
STYLE "M" 14-24



STYLE "L" 37-57



STYLE "M" 34-54



STYLE "M" 37-57



STYLE "L" 67-127
Side Elevation

LIST OF SIZES AND STYLES

Size Numbers	Supply Pipe, Inches	Capacity Gallons per Minute. Style "L." Style "M." Each Unit Style "Special." In Tandem Style "Special"	Shipping Weight in Pounds. Style "L."	Shipping Weight in Pounds. Style "M." and Style "Special"
14 or 17	3/4	1 1/4 to 3	300	600
24 or 27	1	3 to 6	450	900
34 or 37	1 1/4	4 to 8	550	1,000
44 or 47	1 1/2	6 to 12	750	1,500
54 or 57	1 3/4	8 to 16	950	1,800
64 or 67	2	11 to 22	1,500	3,200
74 to 77	2 1/2	15 to 30	1,800	3,500
84 or 87	3	25 to 50	3,000	6,000
94 or 97	4	50 to 100	5,000	10,000
104 or 107	5	75 to 150	8,000	16,000
114 or 117	6	100 to 200	12,000	24,000
124 or 127	6	125 to 250	17,000	34,000

Hygeia Filter Co.

Manufacturers of Water Filters

Branch Offices

NEW YORK, N. Y., 4 Cedar St.
 DALLAS, TEXAS, 1523 Commerce St.
 SAN FRANCISCO, CAL., 871 Market St.

GENERAL OFFICE AND FACTORY DETROIT, MICH.

Branch Offices

CHICAGO, ILL., 70 West Lake St.
 LOS ANGELES, CAL., 1108 Story Bldg.
 MEXICO CITY, MEX., L. M. Rumsey Mfg. Co.

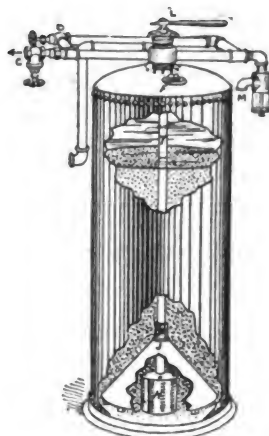
PRODUCTS—WATER FILTERS: "BOWDEN" SINGLE-VALVE, "BOWDEN" SINGLE-VALVE DOUBLE-CYLINDER, "BOWDEN" SINGLE-CHAMBER, "STEWART" MECHANICAL AGITATOR, "ECLIPSE," "MONITOR," AND "STEWART" STONE FILTERS

DESCRIPTION — Latest improvements, best material and most skilled labor enter into the construction of all our Filters.

We manufacture five different styles of Quartz-and-Charcoal Filters and a complete line of Stone Filters; also Filters of special design to suit the different water conditions and pressure.

The Filters rest on short legs or wedges, and have no connections underneath them. The filter bottoms are thus kept dry, preventing rust and wearing out. No false bottoms; this **increases depth of filter bed**. Filtering material is finest quality white crushed quartz or bone black (charcoal), guaranteed 99 86/100 per cent chemically pure. The grains pack closely during filtration and readily disintegrate during washing process.

COAGULATION — Under our construction — when unfiltered water is muddy — an automatic coagulator is attached to Filter. The alum feed cocks on same permit of accurate adjustment and are guaranteed to supply proper amount of alum solution in proportion to volume of water used. **No trace of the solution is left in the filtered water.** All Filters are furnished with or without coagulators as desired.



BOWDEN SINGLE-VALVE FILTER



BOWDEN SINGLE-VALVE DOUBLE-CYLINDER FILTER



STEWART MECHANICAL AGITATOR FILTER



BOWDEN SINGLE-CHAMBER FILTER

NOTE—All Filters are equipped with a sight glass to determine at all times the exact condition of both filtered and unfiltered water.

BOWDEN SINGLE-VALVE FILTERS

Shells are best grade high-pressure steel plate, galvanized. Interior parts are brass, heavily tinned. Operation of Filter controlled by Single Valve "L." All fittings are malleable, galvanized; valves have special soft discs. Cone "J" (patented) insures thorough cleaning of filter bed when Filters are washed.

SIZES, CAPACITIES, ETC., BOWDEN SINGLE-VALVE FILTERS

No.	Supply and Outlet	Waste	Capacity, U. S. Gal. Hr.	Height	Weight in Operation
1	1 1/2"	1 1/2"	150	5'-6"	500 Lbs.
2	2"	2"	180	5'-6"	600 -
3	2 1/2"	2 1/2"	300	5'-6"	700 -
4	3"	3"	400	5'-6"	1000 -
5	3 1/2"	3 1/2"	600	5'-6"	1500 -

BOWDEN SINGLE-VALVE DOUBLE-CYLINDER FILTERS

Same construction as "Single-Valve"; may be operated individually or in tandem, and each Filter washed with filtered water from the other.

SIZES, CAPACITIES, ETC., BOWDEN SINGLE-VALVE DOUBLE-CYLINDER FILTERS

No.	Supply and Outlet	Waste	CAPACITY, U. S. GAL. HR.		Height	Weight in Operation
			Single Filtration	Double Filtration		
20	3 1/2"	1"	300	150	6'	1000 Lbs.
30	1 1/2"	1 1/2"	360	180	6'	1200 -
40	1 1/2"	1 1/2"	600	300	6'	1400 -
50	1 1/2"	2"	800	400	6'	2000 -
60	2"	2 1/2"	1200	600	6'	3000 -
65	2"	2 1/2"	1920	960	6'-6"	4400 -
75	3"	4"	2600	1300	7'	6200 -
85	3"	4"	3800	1900	7'	8000 -
95	3 1/2"	4 1/2"	4800	2400	7'	10000 -

BOWDEN SINGLE-CHAMBER FILTERS

Shells are best boiler steel, with extra-heavy dished heads to withstand high pressure. Jenkins Brothers valves have special soft discs. Standard Fittings. These Filters are constructed with auxiliary cones to allow of rapid washing.

SIZES, CAPACITIES, ETC., BOWDEN SINGLE-CHAMBER FILTERS

No.	Supply and Outlet	Waste	Capacity, U. S. Gal. Hr.	Height	Weight in Operation
6	1 1/2"	2"	960	6'	2200 Lbs.
7	2"	2 1/2"	1300	7'	3100 -
8	2"	3"	1900	7'	4000 -
9	2 1/2"	3"	2400	7'	5000 -

STEWART MECHANICAL AGITATOR FILTERS

Shells are best boiler steel with extra-heavy dished heads to withstand high pressure. All valves have special soft discs; fittings of standard design. All interior pipes and fittings galvanized. The strainers (patented) of phosphor bronze, in two parts, presenting annular slot through which filtered water passes. When filter bed is being washed agitator is revolved. Filters also constructed without agitator.

SIZES, CAPACITIES, ETC., STEWART MECHANICAL AGITATOR FILTERS

No.	Supply and Outlet	Waste	Capacity, U. S. Gal. Hr.	Height	Weight in Operation
14	1 1/2"	1 1/2"	960	7'-6"	1 1/2 Tons
15	1 1/2"	2"	1300	7'-6"	2 -
16	2"	2 1/2"	1900	7'-6"	2 1/2 -
17	2"	3"	2400	8'	3 1/2 -
18	2 1/2"	4"	3600	9'	5 -
19	3"	4"	5400	9'	8 -
70	4"	5"	7600	9'	12 -
80	5"	6"	10000	9'	20 -

NOTE—The capacities of all Filters will vary according to the condition of the raw water and the water pressure.

Catalogue No. 18 fully describing the above Filters, with partial list of customers, sent upon request.

CLASSIFICATION PAGE OF SECTION 36

Kitchen and Laundry Equipment

Section Synopsis

A. KITCHEN RANGES, Coal, Gas, Electric, all styles; Broilers, Patent Ovens; Steam Cooking and Warming Tables; Dishwashers; Hot-plates; Detail Equipment, Vessels and Implements; Electrical Appliances; Tile Bakers' Ovens (patent construction); Brick Bakers' Ovens

B. LAUNDRY MACHINERY OUTFITS. Washers, Wringers, Ironers, Ironing Boards, Mangles, Drying Closets, Portable Dryers, etc.; Laundry Stoves; Sad-Iron Heaters; Starch Boilers Electrical Appliances

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX			SPECIAL CLASSIFICATION						Cat. No.		Manufacturers having Catalog data in this Section		Sub-Index Numbers															
REGULAR CLASSIFICATION			Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.										1 to 16	17 to 32	33 to 48	49 to 64	65 to 80											
A	1	Bakers' ovens, tile, patent	65	Baltimore heaters (S. 41)					A 1	Fuller & Warren Co. Troy, N. Y.	9	17			66													
	2	Brick bakers' ovens	66	Combination tank water heaters, domestic supply (S. 35 C)							11	19				66												
	3	Broilers, fire, gas, electric	67	Heating and ventilation (S. 29 A)							12	20																
	4	Detail cooking appliances	68	Kitchen boilers, circulating (S. 35 C)							14	21																
	5	Dish washers	69	Natural-gas furnace (S. 29 D)						16	22																	
	6	Electric cooking appliances	70	Shavings exhaust system (S. 33 D)						B 1	Mannen & Esterly Co. Cleveland, Ohio	7	36			67												
	7	Flour bins, metal	71	Sheet metal work, architectural, skylights, roofing (S. 16 B)								67					70											
	8	Patent ovens, sheet-iron, bread, pastry	72	Sterilizers (S. 35 E)								70					71											
		Ranges:—	73	Water heaters, domestic supply (S. 35 C)								71																
	9	All cast-iron																										
	10	All steel-plate, French																										
	11	Coal fire																										
	12	Double-oven																										
	13	Electric																										
	14	Elevated oven																										
		Gas fuel:—																										
	15	Acetylene																										
	16	Blau-gas																										
	17	Gasoline																										
	18	Natural gas																										
	19	Springfield																										
	20	Standard																										
	21	Single-oven, cast, plate																										
	22	Steel-plate top, cast-iron																										
23	Steam cooking and warming tables, hot-plates, etc.																											
24	Waffle bakers																											
B	35	Copper wash boilers, portable																										
	36	Drying closets, gas, steam, stove-heating																										
	37	Electric ironers and other laundry appliances																										
	38	Hand mangles																										
	39	Ironing boards																										
		Laundry machinery:—																										
	40	Centrifugal wringers																										
	41	Gasoline tank equipment																										
	42	Ironers, steam, gasoline, gas																										
	43	Layouts, shafting, etc.																										
	44	Mangles, steam, gasoline																										
	45	Washers, wood, galvanized iron																										
		Laundry stoves:—																										
	46	Acetylene																										
	47	Coal																										
	48	Electric																										
	49	Gas, standard																										
	50	Gasoline																										
	51	Natural gas																										
	52	Portable dryers																										
	53	Sad-iron heaters, coke, electric, gas																										
	54	Starch boilers																										
				TRADE NAMES AND BRANDS								SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.																
				"Little Giant," tank and laundry heaters, S. 29 B, Catalog 5																								
			"Manest," clothes dryers, furnaces, flour bins, Catalog B 1																									
			"Stewart," ranges, Catalog A 1																									
Cat. No.		Manufacturers having Catalog data in this Section	Sub-Index Numbers																									
			1 to 16	17 to 32	33 to 48	49 to 64	65 to 80																					
A 2		Bramhall Deane Co. New York, N. Y.	1	20	47	49	66																					
			2	21			67																					
			3	23			68																					
			4				69																					
			6																									
			10																									
			11																									
			12																									
			13																									
			15																									
						Federal Sign System (Electric) S. 42, Cat. 1 (Electric washers, kitchen closets, etc.)																						
						Orr & Lockett Hardware Co. S. 32 A, Cat. 1 (Hotel and restaurant kitchen equipment)																						
			Pierce, Butler & Pierce Mfg. Co. S. 29 B, Cat. 5 (Laundry stoves)																									
			Shirley Boiler & Radiator Co. S. 29 B, Cat. 7 (Laundry stoves)																									
			Taplin, Rice - Clerkin Co. S. 29 D, Cat. 4 (Ranges and stoves)																									

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 16	17 to 32	33 to 48	49 to 64	65 to 80		1 to 16	17 to 32	33 to 48	49 to 64	65 to 80		1 to 16	17 to 32	33 to 48	49 to 64
Abendroth Bros. Port Chester, N. Y.	9 11 12	20 21 22										Paragon Mfg. Co. Chicago, Ill.			38 41 44	
Adams Laundry Machinery Co. Troy, N. Y.			36 37 38 39 40 41 43 44 45	52 53 54		Dodge & Zuill. Baltimore, Md.			45			Peninsular Stove Co. Detroit, Mich.	9 10 12	20 21 22		
American Clothes Dryer Co. New York, N. Y.			36	52		Dryer Mfg. Co. New York, N. Y.			36	52		Pennsylvania Stove & Range Co. Spring City, Pa.	9 10 12	20 21		
American Ironing Machine Co. Chicago, Ill.			45	49		Duparquet, Huot & Moneuse Co. New York, N. Y.	10					Pittsburgh Gas Stove Co. Mount Pleasant, Pa.			20	
American Laundry Machin- ery Co. Chicago, Ill.			36 37 42 45	52		Edwards Mfg. Co. Honey Creek, Ind.			44			Pittston Stove Co. Pittston, Pa.	9 10 11 12			
American Mangle & Roller Co. Racine, Wis.			36 38 40 42 44 45			Empire Laundry Machinery Co. Boston, Mass.			36 37 38 39 40 41 42 43 44 45	52 53 54		Poland Laundry Machinery Co. Boston, Mass.			37 38 39 40 41 42 43 44 45	53 54
American Specialty Mfg. Co. Atlanta, Ga.			37			English, L. R. Baltimore, Md.			45			Porcelain Co. Beaver Falls, Pa.			20	
American Washer Co. St. Louis, Mo.			44			Excelsior Stove Mfg. Co. Quincy, Ill.	9 11 12	20 21 22				Portland Stove Foundry Co. Portland, Me.	9 11 12			
Atlas Laundry Machinery Co. Cincinnati, Ohio			36 37 38 39 40 41 42 43 44 45	52 53 54		Globe Mfg. Co. Perry, Iowa			39 43 44 45			Princess Mfg. Co. Cincinnati, Ohio			44	
Bishop, Geo. H. Chicago, Ill.			47			Grever & Co., Edw. C. Cincinnati, Ohio			40 41 42 43 44 45	52 53 54		Rathbone, Sard & Co. Albany, N. Y.	11	20		
Born Steel Range Co. Cleveland, Ohio	8 10	20 23				Hamilton Copper & Brass Works. Hamilton, Ohio			40 41			Roberts, Winner & Co. Quakerston, Pa.	9 11 12			
Brammer, H. P. Davenport, Iowa			44			Hill-Canton Dryer Co. Canton, Ohio			36			Rollyn-Hawkins-McCain Co. Indianapolis, Ind.			36	52
Buckeye Churn Co. Sidney, Ohio			44			Howes Co., S. M. Boston, Mass.	9 11	22				Sexton Stove & Mfg. Co., S. B. Baltimore, Md.	9 11 12			
Buzzini, Walter, J. New York, N. Y.	10					Hoyt Mfg. Co. Minneapolis, Minn.			41 42 43 44			Shan ion Mfg. Co. New York, N. Y.		26 27	39 42	52
Chicago Dryer Co. Chicago, Ill.			36	52		Hurley Washing Machine Co. Chicago, Ill.			37 42 45			Stamford Gas Stove Co. Stamford, Conn.		20		
Clarey Co., James. New York, N. Y.	1					Indianapolis Stove Co. Indianapolis, Ind.						Stratton & Terstegge Co. Louisville, Ky.	9 10 12	20 21		
Cleveland Laundry Machin- ery Mfg. Co. Cleveland, Ohio			38 39 40 43 44 45			Insinger Co. Philadelphia, Pa.						Swash Motor Washer Co. Columbus, Ohio			44	
Columbia Mfg. Co. Columbia, Pa.			36 37 38 39 40 41 42 43 44 45	53 54		Mateer & Co., F. W. Chicago, Ill.			38 39 40 42 44 45	53 54		Tolhurst Machine Works. Troy, N. Y.			36 40 45	
Daley Laundry Machinery Co. New York, N. Y.			41 42 43 44	53		Miller Range & Furnace Co. Wm. Cincinnati, Ohio	9 11 12	20 21 22				Troy Laundry Machinery Co. Chicago, Ill.			36 37 38 39 40 41 42 43 44	53 54
Dayton Brass Mfg. Co. Dayton, Ohio			45									U. S. Gas Machine Co. Chicago, Ill.				53
Detroit Laundry Machinery Co. Detroit, Mich.			39 40 45	52								Victor Mfg. Co. Leavenworth, Kan.			39 44	
Dietz Mfg. Co., John Cincinnati, Ohio			45									Voss Bros. Mfg. Co. Davenport, Iowa			44	
												Ward Mfg. Co. East Avon, N. Y.			44	
												Western Laundry Machine Co. San Francisco, Cal.			37 38 39 40 41 42 43 44 45	53 54
												Willey Co. Philadelphia, Pa.			41 42 43 44 45	53 54

Established 1831

Fuller & Warren Co.

Manufacturers of "Stewart" Ranges

TROY, N. Y.

Incorporated 1881

NEW YORK OFFICE AND SHOWROOM: 256 WATER STREET

For Our Catalog on Furnaces see Section 29D, Cat. 2

PRODUCTS—ALL KINDS OF STEWART RANGES FOR COAL OR GAS OR BOTH. SINGLE- OR DOUBLE-OVEN RANGES. ALL STYLES OF COMBINATION COAL AND GAS RANGES, HOTEL RANGES AND WATER HEATERS

DESCRIPTION—STEWART Ranges are made in a great variety of styles and sizes so as to meet any requirement. Large selection of shelves, warming closets, etc. Single-oven cabinet ranges made with oven on either the right or left hand side of fire box, according to convenience and arrangement of kitchen plumbing. All ranges are made either portable or brickset. Gas attachments for coal ranges furnished in several different styles. Ash Chute to basement, as illustrated, eliminates usual objectionable method of removing ashes, and **Permanent Polished Top** requires no blacking—two popular features of the STEWART line. Catalogs giving much additional information sent upon request.

COMBINATION COAL AND GAS RANGE—These "2-Fuel" Ranges can be operated with City Gas, Gasoline Gas, Springfield Gas, and Blau-gas. They are suitable for suburban or country use. This style range gives double cooking capacity and insures a comfortable kitchen all the year round.



IDEAL STEWART COMBINATION COAL AND GAS RANGE

Elevated Gas Oven and Broiler and End Cooking Flate. Dust-proof ash chute to basement

DIMENSIONS

No.	Cooking Holes Coal Range	Coal Oven, Inches	Gas Oven, Inches	Gas Broiler, Inches	Top Surface, Inches
528	Six 8-inch	18x18x12	18x15x10 1/2	12x15x9	51 1/2x26 1/2
628	Six 8-inch	20x20x13	18x15x10 1/2	12x15x9	53 1/2x28 1/2
629	Six 9-inch	20x20x13	18x15x10 1/2	12x15x9	53 1/2x28 1/2



STEWART DOUBLE-OVEN RANGE

Furnished with Elevated Gas Attachment, High Shelf or High Warming Closet for either portable or brickset forms. Fitted with ash chute to basement

DIMENSIONS

No.	Cooking Holes	Oven, Inches	Top Surface Port, Inches	HEIGHT, INCHES		
				Top	Shelf	Closet
813	Eight 8-inch	12 1/2x20x14	49x26 1/2	30 1/2	48 3/4	59 1/2
815	Eight 8-inch	14 1/2x21x14	53x28 1/2	30 1/2	48 3/4	59 1/2
915	Eight 9-inch	14 1/2x21x14	53x28 1/2	30 1/2	48 3/4	59 1/2

"A.B.C." SYSTEMS

Bramhall Deane Company

Manufacturers of

French Ranges, Cooking Utensils

Telephone { 4254 } Greeley
 { 4255 }
 { 4256 }

261-265 WEST 36TH STREET
NEW YORK, N. Y.

PRODUCTS—FRENCH RANGES: Coal, Gas and Electric; **GRILLS;** **BROILERS;** **BRICK BAKING OVENS;** **EQUIPMENT** for Kitchens of Hotels, Clubs, Institutions; **WATER HEATERS:** Coal and Gas; **LAUNDRY STOVES;** **KITCHEN BOILERS;** **STERILIZING APPARATUS** for Hospitals

DESCRIPTION—Our products are of the **HIGHEST GRADE**, both as regards design and workmanship. The durability and convenience of our ranges have recently been increased by new improvements covered in patents:

An Oven Door Support, so constructed that it can not get out of order, prevents all possibility of the door's breaking through by being allowed to drop suddenly.

Water Backs of various capacities may be put into any of the fire chambers.

An Anti-Clinker Balanced Grate ensures smooth action and avoids dust.

Duplex Revolving Grate stays in any position, requires no skill to handle as it has no bolts or fastenings, and allows no ashes to escape during the process of cleaning fires.

OTHER IMPORTANT RANGE FEATURES—We build an **Adjustable Flue Grate** in the flue beneath the ovens. It swings upon a pin and is operated through flue door to reduce draught. Fires nearest the chimney may burn more freely than others; one oven may be too quick, while another is too slow. These objections are readily overcome by our flue brake, as the heat transmitted to the ovens is thereby equalized.

A New Pattern Flue Door must be either tightly closed or wide open; and can not be lost, as it is locked to door frame.

A Patent Non-Warping Oven Bottom is made in parts, flanged, riveted and connected to a permanent double-angle brace, protected from the heat. Expansion or contraction is thereby equally distributed and the bottom prevented from buckling and becoming uneven.

DUPLEX RANGE—All sides of the Duplex are available for cooking. The smoke pipe may be taken from top of range or may be carried down underneath floor to an underground flue. These ranges are made up of 3½-ft. or 4-ft. sections, each section having one fire and one oven. We furnish them of as many sections as required. Flat or revolving grates as desired.

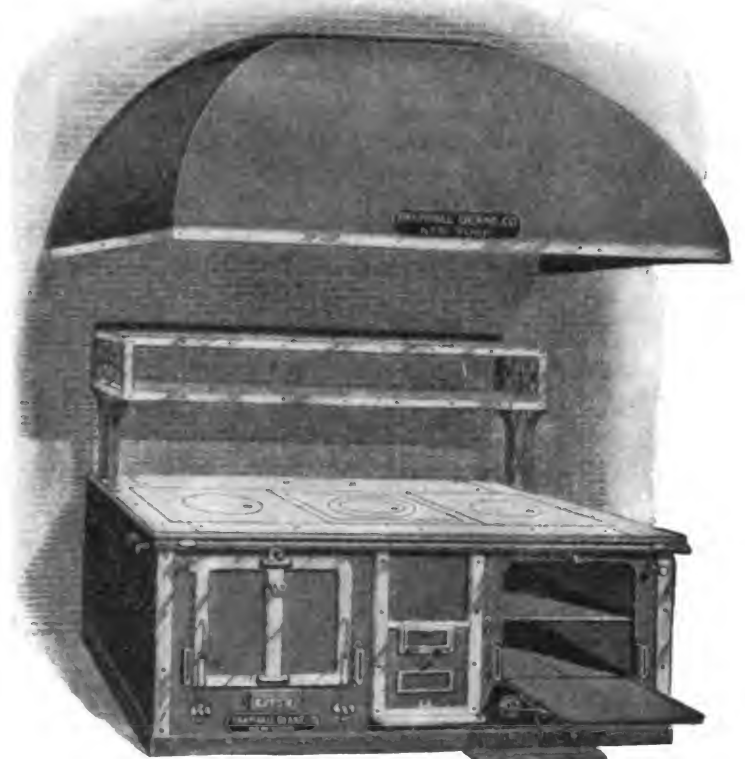
GAS COOKING APPARATUS—We make all types of gas cooking appliances: Ranges, Broilers, Grills, Ovens, Hot Closets, etc. Our designs represent the *highest types* of Gas Range and Broiler construction.

"A.B.C." SYSTEMS

COMBINATION GAS AND COAL RANGES—Our regular stock includes an 18-in. wide sheet-steel gas range made up of an oven with broiler in shelf. This may be attached to either side of coal range, making the **best and most durable Combination Range**.

CO-OPERATION—Specifications and plans for special and distinctive designs will be furnished with pleasure. Allow us to send our representative to quote prices.

SPECIFICATIONS FOR FRENCH RANGES FOR RESIDENCES—Ranges shall be of Bramhall Deane Company make, and shall be of No. 16 American Bessemer steel, with extra heavy cast-iron tops and grates. Fire boxes fitted with either flat or revolving grates as selected, and with extra thick fire brick; water backs to heat boilers up to 120-gallon capacity. Ovens shall be constructed with non-warping full-face steel bottoms. Shelves and hoods shall be as selected. The hearth and back wall shall be fireproof.



FRENCH COAL RANGE AND HOOD FOR RESIDENCES

Size of Range	Ovens		Floor Space	Size of Flue
	No.	Size		
3 ft.	(1)	16¼"x15"x12"	33"x26"	8"x8"
3½ ft.	(2)	12"x14½"x13"	42"x29"	8"x8"
4 ft.	(2)	12½"x19½"x14"	48"x29"	8"x8"
4½ ft.	(2)	14½"x24"x14"	54"x33"	8"x8"
5 ft.	(2)	16½"x24"x14"	60"x33"	8"x8"
6 ft.	(2)	22¼"x28"x16"	72"x39"	8"x8"

The Mannen & Esterly Co.

Manufacturers of

The "Manest" Laundry Dryer, The "Manest" Natural Gas Furnace

2241-2255 ST. CLAIR AVENUE N. E.

CLEVELAND, OHIO

PRODUCTS—THE "MANEST" LAUNDRY CLOTHES DRYER; THE "MANEST" NATURAL-GAS FURNACE; THE "MANEST" METAL FLOUR BINS; SHEET-METAL WORK of all kinds; ROOFING; CORNICES; SKYLIGHTS; PIPE WORK; COPPERSMITHING; HEAVY IRON WORK; SHAVINGS EXHAUST SYSTEM; HEATING AND VENTILATING SYSTEMS

THE "MANEST" CLOTHES DRYER—This apparatus, of which we are the sole manufacturers, is *patented*. It consists of a coal stove, or a natural or artificial-gas stove, a radiator, drying cabinet containing 3 to 8 racks, as desired, and necessary pipe connections for drying and ventilation purposes.

The illustration here shows the "Manest" dryer with natural gas stove, a 5-rack drying cabinet, one of the racks being withdrawn for loading. The superiority of the "Manest" Dryer lies in its **simplicity, and low cost of operation and maintenance.**

MODE OF OPERATION—The stove is directly connected with a radiator located in the bottom of the adjoining drying cabinet underneath the racks filled with washed clothes. The clothes are dried by the currents of hot air arising from the radiator and passing up between the racks.

Currents of air are admitted through registers at the bottom of dryer; and the hot air generated by the radiator carries with it the moisture and impurities from the clothes upwards and onwards through the ventilation pipe to the chimney.

All steam from the clothes is, therefore, instantly withdrawn from the cabinet by means of a vent pipe of suitable size connected to a **DOUBLE PIPE** at the chimney—one part of which is the ordinary smoke pipe, and the other this vent pipe. The vent pipe is distinctly separate from smoke pipe as connected to chimney flue.

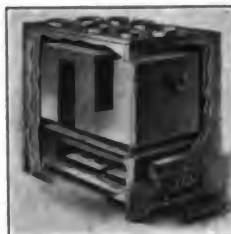
This Ventilating Process is thus going on uniformly regardless of the smoke pipe which is regulated at all times by its own individual damper. The steam arising from the clothes cannot re-enter the cabinet, thus affording a most **sanitary** method of performing laundry work.

WIRE MESH SCREEN—We supply a wire mesh screen, supported over the radiator (and below the clothes rack), which prevents any clothes falling off the bars from coming in contact with the radiator and being scorched.

In this respect the "Manest" Dryer is **proof against fire**, as the connecting pipe between radiator and stove is at a safe distance from the wire screen over the radiator.

DIMENSIONS OF STOVE—Coal Stove, 27 x 31 inches, with two 9-inch Covers; two-burner Gas Stove, 27 x 31 inches, with two 9-inch Covers.

"A.B.C." SYSTEMS



THE "MANEST" NATURAL GAS FURNACE

THE "MANEST" NATURAL - GAS FURNACE—It is patented, and is the most economical heating apparatus on the market. It may be attached to a coal furnace as a combination. Prices and further information sent on application.

SIZES OF DRYING CABINETS—The following are our standard sizes of drying cabinets, always in stock, and furnished promptly. Special sizes made to order, with reasonable additional charges for making changes. Upon request, prices and estimates will be supplied.

No.	Racks	Height	Width	Length Closed	Length With Rack Extended
3	3	7 ft.	24 in.	7 ft.	14 ft.
4	4	7 ft.	31 in.	7 ft.	14 ft.
5	5	7 ft.	39 in.	7 ft.	14 ft.
6	6	7 ft.	46 in.	7 ft.	14 ft.
7	7	7 ft.	54 in.	7 ft.	14 ft.
8	8	7 ft.	61 in.	7 ft.	14 ft.



THE "MANEST" LAUNDRY CLOTHES DRYER SHOWING 5-RACK DRYING CABINET, WITH NATURAL GAS STOVE

THE "MANEST" METAL FLOUR BINS—We are the sole manufacturers of the "Manest" Metal Flour Bins, the construction of which is flawless in every respect. Our stock sizes are of 25 lbs., 50 lbs. and 100 lbs. capacity. They are **proof against rodents and all kinds of vermin.**



THE "MANEST" METAL FLOUR BOX

TABLE OF STOCK SIZES					
No.	High	Wide	Deep	Capacity	Price
25	16 in.	12	8 in.	1/4 bbl. or 25 lbs.	\$1.75
50	20 in.	14	11 in.	1/2 bbl. or 50 lbs.	2.50
100	25 in.	18	14 in.	1 1/2 bbl. or 100 lbs.	5.00

CLASSIFICATION PAGE OF
SECTION 37

Stable and Abattoir Fittings and Garage Equipment

(Drainage Work see Section 35)

Section Synopsis

Stalls, Mangers, Hay Racks, Troughs, Harness Brackets, Feed Chutes and Boxes, Special Sinks, Feed Bins; Patent Stall Floors; Stable Pavement; Special Stable Windows and Doors; Hardware for Stables; Hoists, etc.

Carriage Washers; Automobile and Carriage Turntables; Gasoline-Storage Systems, Pumps, Valves, Hose, Measuring and Distributing Devices; Abattoir Specialties

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX	
REGULAR CLASSIFICATION	
1	Abattoir specialties
2	Automobile and carriage turntables
3	Carriage washers
4	Feed chutes, boxes, bins, metal
	Gasoline:—
5	Hose
6	Measuring and distributing apparatus, meters
7	Pumps, valves
8	Storage systems, tanks
9	Harness brackets
10	Hay and feed hoists
11	Mangers, hayracks, sinks, troughs, iron, iron-enameled
12	Mangers, troughs, special sinks, earthenware, iron
13	Patent stall floors
14	Special door and window hardware and fixtures
15	Stall guards, iron, wire
16	Stall posts, cast-iron
17	Stall windows, special, ventilating
SPECIAL CLASSIFICATION	
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
34	Builders' iron work and structural hardware (S. 18)
35	Cast-iron columns and base plates (S. 14)
36	Conductor connections (S. 16 B)
37	Sidewalk doors and gratings, manholes, etc. (S. 15 A)
38	Special stable and garage drains, gutters, cesspools, etc. (S. 35 D)

TRADE NAMES AND BRANDS						
"Trident," gasoline meter, S. 35 A, Catalog 4						
"Universal," auto-turntable, Catalog 1						
Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 8	9 to 16	17 to 24	25 to 32	33 to 40
1	Canton Foundry & Machine Co. Canton, Ohio	2 4				34 35 36 37 38
SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.						
F. E. Carpenter Co. S. 15 A, Cat. 4 (Stable fittings)						

Cincinnati Mfg. Co., The S. 15 A, Cat. 7 (Stable fittings)
Compound Injector & Specialty Co. S. 35 D, Cat. 1 (Garage and stable floor cesspools)
Des Moines Bridge & Iron Co. S. 35 F, Cat. 4 (Turntables)
Neptune Meter Co. S. 35 A, Cat. 4 (Gasoline meters)
Pitt Composite Iron Works, The Wm. R. S. 15 A, Cat. 8 (Special stable fittings)

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Number			
	1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		1 to 8	9 to 16	17 to 24	25 to 32	33 to 40		1 to 8	9 to 16	17 to 24	25 to 32
						Lansing Co. Lansing, Mich.	2									
Beach Co., T. C. St. Johns, Mich.	2					Logan, Martin New York, N. Y.		13				Rockford Steel Fixture Co.. Rockford, Ill.		10 11		
						Louden Machinery Co. Fairfield, Conn.		10 14 15 16								
Elliott Co., Sterling Newton, Mass.	2											Schouler Cement & Con- struction Co. Newark, N. J.		9 10 11 13		
						Mott, J. L., Iron Works. New York, N. Y.		11 12 14 15 16	17		34					
Piske, J. W. & Co. New York, N. Y.		11 12 14 15 16	17									Smith Iron Co., G. W. & F.. Boston, Mass.	2			
						Perfect Mfg. Co. Albany, N. Y.	3									
Kent Mfg. Co. Port Atkinson, Wis.		15 16										Smith Wire & Iron Works, F. P. Chicago, Ill.		11 12 14 15 16	17	
						Pitless Auto Turntable Co. Kansas City, Mo.	2									

"A.B.C." SYSTEMS

The Canton Foundry & Machine Co.

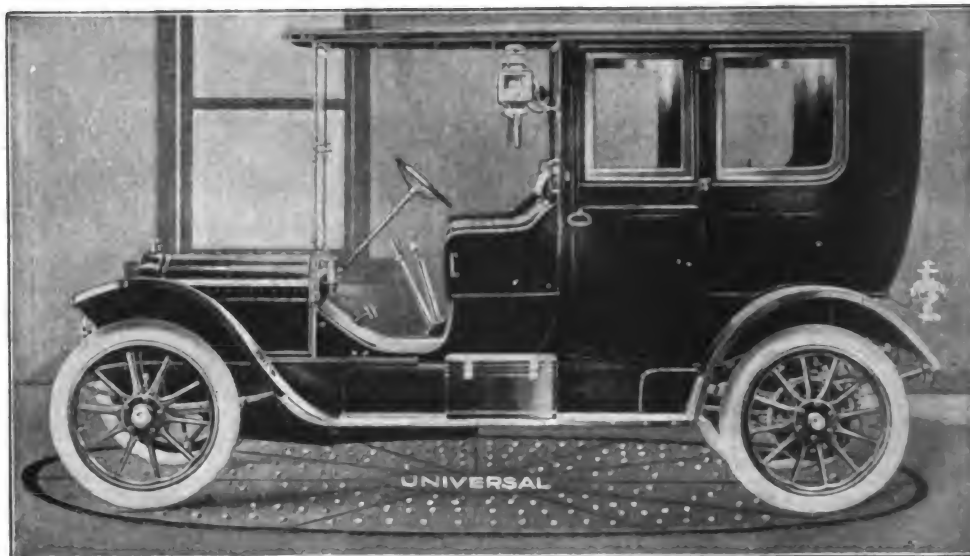
Garage Turntables, Equipment, Builders' General Iron Work

CANTON, OHIO

PRODUCTS—Garage and General Car Equipment: THE "UNIVERSAL" AUTO-TURNTABLE.

Contractors' and Builders' Accessories: SIDE-WALK DOORS, AREA GRATINGS, COAL HOLE RINGS AND COVERS; CONDUCTOR CONNECTIONS AND BOOTS; FEED BOXES, GUTTER BOXES, MANHOLES, CATCH BASINS; CAST-IRON COLUMNS, BASE PLATES AND CAPS

UNIVERSAL AUTO-TURNTABLE—We claim that no other Automobile Turntable is the equal of the "Universal" in capacity, durability, reduction of repair bills and general satisfaction. The "Universal" is fully guaranteed to sustain a weight of 8000 pounds and to be turned easily by one man. It is indispensable where safety, economy of space, saving of expense, time and convenience are considered. A depth of twelve inches below floor level will contain it. May be placed on upper floors. Friction reduced to a minimum. When ordered, a wash-rack extension will be furnished with the Auto-Turntable.



"UNIVERSAL" AUTO-TURNTABLE FOR MODERN GARAGE

TABLE OF SIZES.

Wheel Base, inches.....	108	132	144	156
Table Diameter, feet.....	12	14	15	16
Shipping Weight, pounds.....	4550	5300	5600	6000
Supporting Capacity, pounds.....	8000	8000	8000	8000

In fixing wheel base, allowance has been made for squash of tires and possibility of not running on table directly at center.

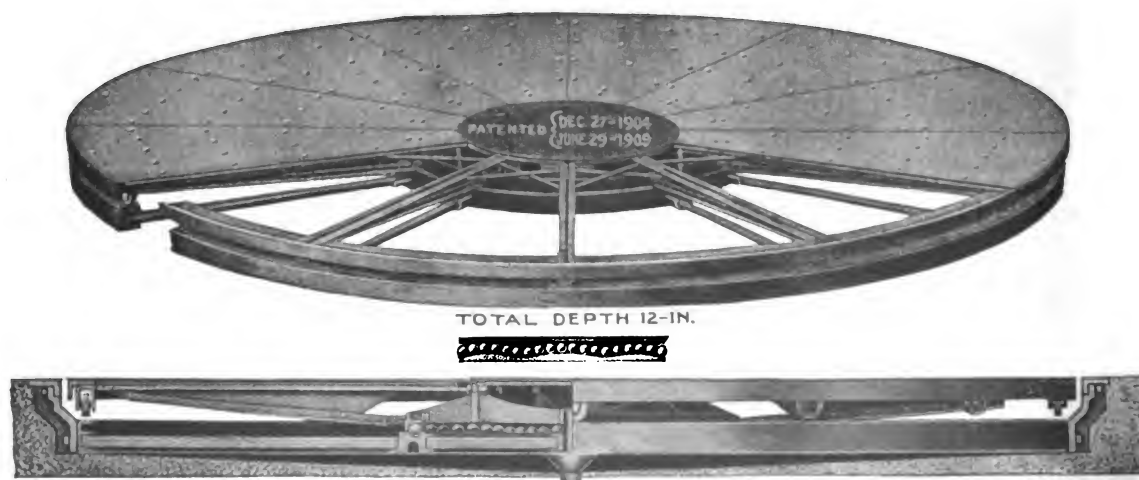
CONSTRUCTION DETAILS—Turntables furnished complete with angle-iron Foundation Supporting Band firmly bolted to outer rim, for concrete floors. Supporting band is fitted with bolts extended into concrete floor.

BALL BEARING—Note the grooved "Serpentine" Track (patented) in which the balls revolve. Seven balls, properly spaced, sustain the full weight.

Superstructure is of structural steel, built in truss-form. Top plates are reinforced underneath by angle irons riveted crosswise and resting on trusses. All parts are structural steel and iron. Table cannot tilt, as depression throws castor wheels to rim track.

ATTENTION OF ARCHITECTS—Note that our "Serpentine" Track reduces friction 50% more than any similar device in any other turntable made. A pit, 12 inches deep, will contain any of our turntables, and they may be placed on any floor. Foundation is a circular concrete base, perfectly level, and grooved so as to drain to sewer.

PRICES—Catalog C-3 on request.



CONCRETE ANY DEPTH AND GROOVED TO WATER DRAIN

"UNIVERSAL" AUTO-TURNTABLE, SHOWING GENERAL CONSTRUCTION AND DETAIL OF BALL BEARINGS ON SERPENTINE TRACK

"A.B.C." SYSTEMS

CLASSIFICATION PAGE OF
SECTION 38

Vacuum Cleaning Apparatus

Section Synopsis

Stationary Machines, all designs; Portable Apparatus; Piping, Detail Equipment, Cleaning Tools

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that **they make these particular products** and others of the same class. On the left is given the **Number and Location** of each catalog.

SUB-INDEX	
<div><div>1 2 3 4 5 6 7 8 9 10</div><div>Detail equipments:— Cleaning tools Hose Piping and valves Hospital and sick room cleaner, specially Installation layouts Portable apparatus Stationary machines:— Air-pump type Aspirator, steam type Exhaust-fan type Water-power type</div></div>	
SPECIAL CLASSIFICATION	
Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
<div><div>21 22 23</div><div>Electric air compressors (S. 30 D) Pneumatic sewage and sump water ejectors (S. 28 F) Steam air compressors (S. 28 F)</div></div>	
TRADE NAMES AND BRANDS	
<div>"Richmond," vacuum cleaners, Catalog 1 "Santo," vacuum cleaners, Catalog 3 "Wa-Po-Vac," vacuum generator, hydr., Catalog 2</div>	

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30
5	Monarch Vacuum Cleaner Co. New York, N. Y.	1 2 3 5				
3	Santo Manufacturing Co. Philadelphia, Pa.	1 2 3 5	6			
4	Blaisdell Machinery Co., The Bradford, Pa.	1 2 3 5	6			21 22 23
2	Water Power Vacuum Cleaner Co. Buffalo, N. Y.	1 2 3 4	6 10			
1	McCrum - Howell Co., The New York, N. Y.	1 2 3 5	6 7 8			

SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose catalogs are placed elsewhere according to their general line of business.

Federal Sign System
(Electric)
S. 42, Cat. 1
(Electric vacuum cleaner)

Thomas & Smith, Inc.
S. 35 F. Cat. 3
(Vacuum cleaning apparatus)

Manufacturers without Catalog data.	Sub-Index Numbers				
	1 to 5	6 to 10	11 to 15	16 to 20	21 to 30
American Radiator Co..... Chicago, Ill.	1 2 3 5	6 9			
American Rotary Valve Co.. Chicago, Ill.	1 2 3 5	6 7			

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20	21 to 30		1 to 5	6 to 10	11 to 15	16 to 20
												Nohe Electric Renovator Co. Chicago, Ill.	1 2	6 9		
						Electric Renovator Co..... Pittsburgh, Pa.	1 2 3	6 9								
Beckus Water Motor Co.. Newark, N. J.	1 2 3 5	6 9				Everson Mfg. Co..... Boston, Mass.		6				Perfection Vacuum Cleaner Co. Chicago, Ill.	5	6 9		
Beach-Russ Co..... Brooklyn, N. Y.	1 2 3 5	6 7				Garden City Fan Co. Chicago, Ill.	1 2 3 5	7				Princess Mfg. Co..... Cincinnati, Ohio		6		
						Hanlon & Wilson..... Wilkesburg, Pa.	1 2 3	6 7				Regina Co..... New York, N. Y.	1 2	6		
Crowell, J. G..... Brooklyn, N. Y.		7				Hoover Suction Sweeper Co. New Berlin, Ohio	1 2	6 9								
												Sturtevant Co., B. F..... Hyde Park, Mass.	1 2 3	6 9		
Cyclone Vacuum Cleaner Co Bradford, Pa.	1 2	6 7				Hope Vacuum Cleaner Co... Kansas City, Mo.	1 2 3 5	6 9								
												United Electric Co..... Canton, Ohio	1 2 3	7		
						Kellogg-Mackay Co..... Chicago, Ill.	1 3 5	7								
Domestic Appliance Co... Rochester, N. Y.	1 2 3 5	9										United Vacuum Appliance Co. New York, N. Y.	1 3 5	6 7		
Duntley Mfg. Co..... Chicago, Ill.		6 7				National Vacuum Cleaning Co. Dayton, Ohio	1 2	7 9				Webb-Baxter Co..... Anderson, Ind.	1 2 3 5	6 9		

The McCrum-Howell Co.

Manufacturers of Stationary Vacuum Cleaners

General Offices
NEW YORK Park Avenue and 41st Street
CHICAGO Rush and Michigan Streets

Branch Offices
BOSTON, MASS., 69-71 Federal St.
NEWARK, N. J., 43 Clinton St.
PHILADELPHIA, PA., 1108 Walnut St.
MONTREAL, CANADA, 15 Concord St.
SCRANTON, PA., 214 Wyoming Ave.
PITTSBURG, PA., 109 Jenkins Arcade
CLEVELAND, OHIO, Builders' Exchange
CINCINNATI, OHIO, 5th & Vine Sts.
ATLANTA, GA., 615 Forsyth Bldg.
DETROIT, MICH., 614 Moffatt Bldg.
INDIANAPOLIS, IND., 48 Monument Pl.
MILWAUKEE, WIS., St. Charles Hotel Bldg.
NEW ORLEANS, LA., 618 Audubon Bldg.
MINNEAPOLIS, MINN., 821 Palace Bldg.
OKLAHOMA CITY, OKLA., Majestic Bldg.
PORTLAND, ORE., 167 Seventh St.
SEATTLE, WASH., 621 Coleman Bldg.
LOS ANGELES, CAL., 347 Pacific Elec. Bldg.

Factories: CHICAGO, PHILADELPHIA, RACINE AND MONTREAL

For our Catalog on Heating Boilers and Radiators see Section 29B, Cat. 2
For our Catalog on Transom Lifts and Casement Adjusters see Section 19A, Cat. 2

PRODUCTS—**RICHMOND** STATIONARY VACUUM CLEANING SYSTEMS

VACUUM CLEANING—As an essential to comfort and health it is our belief that Stationary Vacuum Cleaning will eventually become as fixed a factor in modern building construction as bathtubs, steam and hot-water heating, or sanitary plumbing.

FIRST COMPLETE SYSTEM—Vacuum Cleaning has been developed by many men working independently, with a consequent war of inventors over individually controlled patented features. Only now, for the first time, is it possible to offer a perfect, complete Stationary Vacuum Cleaning System embodying under one ownership all the ingenuities of the best inventors. This system, the **RICHMOND**, can be installed without fear of infringement and damage suits. As a result of the above ownership, the cost of production is so much reduced as to bring within reach of all the perfect appliances of the **RICHMOND** Stationary Vacuum Cleaning System.

CAPACITY—**RICHMOND** Vacuum Cleaning Machines herewith listed are rated by their sweeper capacity, which means that the different machines will operate at one time as many tools as their capacity calls for.

TOOLS—With each machine is furnished a set of tools for each sweeper capacity, with hose for connecting to service inlets, which can be distributed through building in which machine is installed.

POWER—**RICHMOND** Stationary Vacuum Cleaning Machines are built to suit specific requirements as to power available for their use, which is indicated on data plate of Electric Motor, and on number plate of steam aspirator. Power for which machine is built must be available without variation of intensity whenever machine is in operation.

PERPETUAL GUARANTEE—We guarantee every **RICHMOND** Vacuum Cleaning Machine against defects in manufacture, and agree that, should any structural defects develop at any time, we will furnish, free of cost, new parts

to replace any found imperfect in manufacture. Or, if the machine is returned to any of our vacuum cleaning machinery plants, we will overhaul it and repair structural defects without charge to the owner for materials, labor or transportation.

ORDERING INSTRUCTIONS—All Electric Machines, either direct or belt driven, are equipped with motors to suit current available. Specifications must state if direct or alternating current is to be used. If direct, give voltage; if alternating, give voltage, phase and cycles.

Steam Aspirators and steam-driven Machines are built to operate at pressure available, and specifications must state pressure at point where connection is to be made. Pressure of less than sixty pounds not accepted.

Orders not accepted subject to cancellation.

SPECIAL SIZES—For machines or equipments of larger capacity than listed herewith, we will submit data and prices on receipt of specifications.

INSTALLATION—Any plumber or steam fitter can install our **RICHMOND** Stationary Vacuum Cleaning Systems, or furnish descriptions and prices.

RICHMOND ROTARY VACUUM CLEANING MACHINE

—Vacuum produced by continuous-suction rotary pump, direct connected to motor. One-horsepower motor, either direct or alternating, wound for 110 or 220 voltage, as specified. Other currents at special prices. Single dry-strainer Separator, requiring no extra outside connections. Power controlled by automatic relief valve.

Illustrated by adjoining cut 11.



FIG. 11

TABLE OF SIZES AND PRICE

Number	Extreme Dimensions			Tappings		Shipping Weight, Pounds	Capacity Number Sweepers	List Price
	Length, Inches	Width, Inches	Height, Inches	Air Main, Inches	Exhaust, Inches			
11	45	14	45	1½	2	640	1	\$600

Tools, one complete set, nickel-plated, consisting of:—

- 50 ft. of 1-inch Vacuum Hose, in 2 lengths of 25 ft. each, with 2 slip joint couplings,
- 1 Standard 10-inch Carpet and Rug Renovator,
- * 1 12-inch Bare Floor Sweeper with swivel back,
- 1 10-inch Wall Duster with hinged back,
- 1 Tuft Cleaner,
- 1 Long Handle, 42 inches,
- 1 Short Handle, 12 inches,
- 1 Arm Handle with cut-off valve,
- 1 Extension Handle, 42 inches,
- 1 Radiator Tool,
- * 1 12-inch Floor Brush with swivel back,
- 1 Book Brush,
- 1 Goose Neck,
- 1 Upholstery Tool.

*When for School use omit tools marked and substitute therefor 1 10" Diamond Back and 1 15" Side Fiber Type Bare Floor Tool.

Apparatus is sold f.o.b. factory, fully assembled, tested, adjusted and regulated; shipped complete (in crate), ready to be set in place, requiring only the running of mains and risers, and connecting electric wires. Connections required: Electrical mains; exhaust to chimney or other free outlet; main inlet from risers.

This type of apparatus is recommended for moderate-sized residences and other buildings of limited area.

Its distinctive features are: Small size; direct-driven continuous-suction rotary pump; continuous oiling system; convenient size for moving in case of change of residence; compact mounting, all parts on one common iron base; automatic dust trip. Built in one-sweeper capacity only.

This machine can also be equipped with Gas- or Gasoline-Engine Drive. Particulars on application.

RICHMOND PISTON VACUUM CLEANING MACHINE

Vacuum produced by horizontal double-opposed cylinder piston pump with automatic poppet valve, belt-driven from motor. Two - horsepower motor for direct or alternating current, wound for 110 or 220 voltage, as specified. Other currents at special prices. Single dry-strainer process Separator, with automatic strainer-cleaner; no outside connections required.

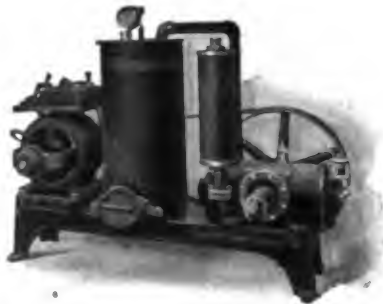


FIG. 121

Illustrated by adjoining cut 121.

TABLE OF SIZES AND PRICE

Number	Extreme Dimensions			Tappings		Shipping Weight, Pounds	Capacity Number Sweepers	List Price
	Length Inches	Width Inches	Height Inches	Air Main Inches	Exhaust Inches			
121	62	25	45	1½	1½	1,000	1	\$850

Tools, one complete set, nickel-plated, consisting of:—

- 50 ft. of 1-inch Vacuum Hose, in two lengths of 25 ft. each, with two slip joint couplings,
- 1 Standard 10-inch Carpet and Rug Renovator,
- * 1 12-inch Bare Floor Sweeper with swivel back,
- 1 10-inch Wall Duster with hinged back,
- * 1 Tuft Cleaner,

"A.B.C." SYSTEMS

- 1 Long Handle, 42 inches,
- 1 Short Handle, 12 inches,
- 1 Arm Handle with cut-off valve,
- 1 Extension Handle 42 inches,
- 1 Radiator Tool,
- * 1 12-inch Floor Brush with swivel back,
- 1 Book Brush,
- 1 Goose Neck,
- 1 Upholstery Tool.

*When for school use omit tools marked and substitute therefor 1 10" Diamond Back and 1 15" Side Fiber Type Bare Floor Tool.

Connections required: Electric mains; exhaust to chimney or other free outlet; main inlet from risers.

This machine is designed especially for residences, apartments and schools, but may be used in other buildings where the areas to be cleaned are not too extensive.

Its distinctive features are: Positive double-acting piston pump, automatic oiling system; automatic relief valve to protect motor; automatic dust-strainer cleaner; adjustable sliding base for tightening belt; compact, self-contained; requires no special foundation; mounted on base complete, with dry separator. Built in one-sweeper capacity only.

This machine can also be equipped with Gas- or Gasoline-Engine Drive. Particulars on application.

RICHMOND ROTARY VACUUM CLEANING MACHINE

Vacuum produced by continuous-suction rotary pump, direct-connected to motor. Two-horsepower motor, either direct or alternating, wound for 110 or 220 voltage, as specified. Other currents at special prices. Single dry-strainer Separator, requiring no extra outside connections. Control of power: Automatic load-unloading and relief valve. Control of operation: Distant control valve at arm handle of the cleaning tool in hands of operator.



FIG. 21

Illustrated by adjoining cut 21.

TABLE OF SIZES AND PRICE

Number	Extreme Dimensions			Tappings		Shipping Weight, Pounds	Capacity Number Sweepers	List Price
	Length Inches	Width Inches	Height Inches	Air Main Inches	Exhaust Inches			
21	54	91	57	1½	2	730	1	\$900

Tools, one complete set, nickel-plated, consisting of:—

- 50 ft. of 1-inch Vacuum Hose, in two lengths of 25 ft. each, with two slip joint couplings,
- 1 Standard 10-inch Carpet and Rug Renovator,
- * 1 12-inch Bare Floor Sweeper with swivel back,
- 1 10-inch Wall Duster with hinged back,
- 1 Tuft Cleaner,
- 1 Long Handle, 42 inches,
- 1 Short Handle, 12 inches,
- 1 Arm Handle with cut-off valve,
- 1 Extension Handle 42 inches,
- 1 Radiator Tool,
- * 1 12-inch Floor Brush with swivel back,
- 1 Book Brush,
- 1 Goose Neck,
- 1 Upholstery Tool.

*When for school use omit tools marked and substitute therefor 1 10" Diamond Back and 1 15" Side Fiber Type Bare Floor Tool.

Continued on next page

Connections required: Electric mains; exhaust to chimney or other free outlet; main inlet from risers.

Recommended for large residences, mansions, small offices, small clubs, small bank buildings, small hotels and similar buildings.

Its distinctive features are: Automatic unloading and safety-relief power control; distant control of operation and power by means of thumb valve in handle of tool; direct-driven; continuous oiling system; compact mounting; all parts on one common iron base; automatic dust trip. Built in one-sweeper capacity only.

This machine can also be equipped with Gas- or Gasoline-Engine Drive. Particulars on application.

RICHMOND PISTON VACUUM CLEANING MACHINE—

Vacuum produced by vertical double-acting piston pump, with automatic poppet valves, belt-driven from motor. Three-horsepower motor, either direct or alternating, wound for 110 or 220 voltage, as specified. Other currents at special prices. The "dry and wet" system of dust separator is used. The dust is first drawn into the dry tank, where about 97 per cent. of it is precipitated to the bottom by centrifugal action. The remainder is drawn through an atomizer, which thoroughly saturates every particle and deposits it in the water of the wet separator tank. The latter tank is connected with the water-service pipes, while a drain pipe leads to the sewer, which permits of easy changing of water.



FIG. 221

Illustrated by adjoining cut 221.

TABLE OF SIZES AND PRICE

Number	Extreme Dimensions			Tappings		Shipping Weight, Pounds	Capacity Number Sweepers	List Price
	Length Inches	Width Inches	Height Inches	Air Main Inches	Exhaust Inches			
221	86	25	45	1½	1½	1,100	1	\$1,000

Tools, one complete set, nickel-plated, consisting of:—

- 50 ft. of 1-inch Vacuum Hose, in two lengths of 25 ft. each, with two slip joint couplings,
- 1 Standard 10-inch Carpet and Rug Renovator,
- * 1 12-inch Bare Floor Sweeper with swivel back,
- 1 10-inch Wall Duster with hinged back,
- 1 Tuft Cleaner,
- 1 Long Handle, 42 inches,
- 1 Short Handle, 12 inches,
- 1 Arm Handle, with cut-off valve,
- 1 Extension Handle, 42 inches,
- 1 Radiator Tool,
- * 1 12-inch Floor Brush, swivel back,
- 1 Book Brush,
- 1 Goose Neck,
- 1 Upholstery Tool.

*When for school use omit tools marked and substitute therefor 1 10" Diamond Back and 1 15" Side Fiber Type Bare Floor Tool.

"A.B.C." SYSTEMS

Apparatus is sold f.o.b. factory, fully assembled, tested, adjusted and regulated; shipped complete (in crate), ready to be set in place and connected with mains and risers, water-service pipes and sewer and electric wires. Connections required: Electric mains; main exhaust; water-service pipes; discharge to sewer.

Recommended for hotels, office buildings, schools, churches, theaters, hospitals, public institutions or wherever heavy cleaning operations are required, and where areas to be cleaned are such that a single-sweeper machine is sufficient.

Its distinctive features are: Compactness; mounted on single base; no special foundation nor holding-down bolts required; large belt surface; quiet running; sliding base for tightening belt; automatic unloading feature; automatic splash oiling system; automatic safety filling device for wet tank; dependability and durability. Built in one-sweeper capacity only.

This machine can also be equipped with Gas- or Gasoline-Engine drive. Particulars on application.

RICHMOND PISTON VACUUM CLEANING MACHINE—

Vacuum produced by vertical double-acting piston pump, with automatic poppet valves, belt-driven from motor. Three-horsepower motor, either direct or alternating, wound for 110 or 220 voltage, as specified. Other currents at special prices. The "dry and wet" system of dust separator is used. The dust is first drawn into the dry tank, where about 97 per cent. of it is precipitated to the bottom by centrifugal action. The remainder is drawn through an atomizer, which thoroughly saturates every particle and deposits it in the water of the wet separator tank. The latter tank is connected with the water-service pipes, while a drain pipe leads to the sewer, which permits of easy changing of water.



FIG. 131

Illustrated by adjoining cut 131.

TABLE OF SIZES AND PRICE

No.	Extreme Dimensions			Tappings				Shipping Weight Pounds	Capacity Number Sweepers	List Price
	Length In.	Width In.	Height In.	Air Main In.	Exhaust In.	Water Service In.	Drain In.			
131	80	28	60	2	2	½	1½	1,800	1	\$1,800

Tools, one complete set, nickel-plated, consisting of:—

- 75 ft. 1-inch Vacuum Hose, in one 25 and one 50 ft. length, with two slip joint couplings,
- 1 Standard 10-inch Carpet and Rug Renovator, swivel back,
- * 1 18-inch Bare Floor Sweeper, with swivel back,
- 1 10-inch Wall Duster with hinged back,
- 1 Tuft Cleaner,
- 1 Long Handle, 42 inches,

Continued on next page

- 1 Short Handle, 12 inches,
- 1 Extension Handle, 42 inches,
- 1 Goose Neck,
- 1 Arm Handle, with cut-off valve,
- 1 Radiator Tool,
- * 1 18-inch Floor Brush, swivel back,
- 1 Book Brush,
- 1 Upholstery Tool.

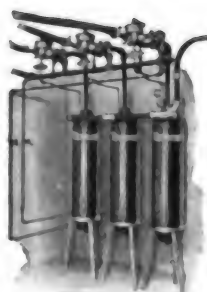
*Special Tool Equipment for Schools omits these and has in their place:
1 10-inch Diamond Shape Floor Sweeper with swivel back, 1 15-inch Fiber Type Bare Floor Tool.

Apparatus is sold f.o.b. factory, fully assembled, tested, adjusted and regulated; shipped complete (in crate), ready to be set in place and connected with mains and risers, water-service pipes and sewer and electric wires. Connections required: Electric mains; main exhaust; water-service pipes; discharge to sewer.

Recommended for hotels, office buildings, schools, churches, theaters, hospitals, public institutions, or wherever heavy cleaning operations are required, and where areas to be cleaned are such that a single-sweeper machine is sufficient.

Its distinctive features are: Compactness, mounted on single base; no special foundation nor holding-down bolts required; large belt surface; quiet running; sliding base for tightening belt; automatic unloading feature; automatic splash oiling system; automatic safety filling device for wet tank; dependability and durability. Built in one-sweeper capacity only.

This machine can also be equipped with Gas or Gasoline-Engine Drive. Particulars on application.



RICHMOND
VACUUM ASPIRATOR
A-1 TO A-6

RICHMOND VACUUM ASPIRATOR—Vacuum produced by expansion steam-jet aspirator. One centrifugal-vertical dry Separator. No extra outside connection required. Control of operation: Distant control valve at arm handle of cleaning tool in hands of operator.

Illustrated by adjoining cut.

TABLE OF SIZES AND PRICES

Number	Diameter Inches	Height Over All Inches	Tappings			Capacity Number Sweepers	List Price
			Air Main Inches	Exhaust Inches	Steam Supply Pipe Inches		
A-1	14	80	1½	2½	1½	1	\$ 960
A-2	14	90	2	3	1½	2	1,440
A-3	14	90	2	3	1½	3	1,920
A-4	18	96	2½	3½	1½	4	2,400
A-5	18	96	3	4	1½	5	2,880
A-6	18	96	3	4	1½	6	3,360

If the steam or exhaust pipes exceed 50 feet in length, above sizes must be increased

Tools, one complete set, nickel-plated, consisting of:—

- 75 ft. 1-inch Vacuum Hose, in one 25 and one 50 ft. length, with two slip joint couplings,
- 1 Standard 10-inch Carpet and Rug Renovator, swivel back,
- * 1 18-inch Bare Floor Sweeper, with swivel back,
- 1 10-inch Wall Duster, with hinged back,
- 1 Tuft Cleaner,
- 1 Long Handle, 42 inches,
- 1 Short Handle, 12 inches,

"A.B.C." SYSTEMS

- 1 Extension Handle, 42 inches,
- 1 Goose Neck,
- 1 Arm Handle, with cut-off valve,
- 1 Radiator Tool,
- * 1 18-inch Floor Brush, swivel back,
- 1 Book Brush,
- 1 Upholstery Tool.

*Special Tool Equipment for Schools omits these and has in their place:
1 10-inch Diamond Shape Floor Sweeper, 1 15-inch Side Fiber Type Bare Floor Tool.

Apparatus is sold f.o.b. factory. After being fully assembled, tested, adjusted and regulated, it is shipped knocked down, ready to be assembled in place and connected with mains and risers. Connections required: High-pressure steam (60 pounds and upward); exhaust to smoke stack or other free outlet; main inlet from risers.

Recommended for hotels, office buildings, schools, churches, clubs, theaters, factories, laundries, large public institutions, or wherever large cleaning operations are required, and where high-pressure steam (60 pounds and up—is available for power.

Its distinctive features are: The vacuum producer consists of a steam-jet aspirator, having no moving parts whatever. It translates steam pressure direct into vacuum. The automatic positive cut-off power used, regulates the steadiness of operation and maintains uniform efficiency under all varying conditions of work. This type carries out to the highest degree the idea that vacuum should at all reasonable times be "on tap," practically without expense or trouble when not in use, just as one expects to find gas, electricity or water always "on tap." Built from one-sweeper up to any capacity of combining units.



RICHMOND ROTARY VACUUM CLEANING MACHINE

Vacuum produced by continuous-suction rotary pump operated by motor through silent chain drive. Direct or alternating motor, wound for 110 or 220 voltage, as specified. For horsepower see table. Other currents at special prices. One centrifugal-vertical dry separator for the heavier dirt and a secondary dry-strainer separator for the remaining fine dust. No extra outside connections required. Control of power: Automatic load-unloading valve. Control of operation: Distant control valve at arm handle of cleaning tool in hands of operator.

RICHMOND ROTARY CHAIN-DRIVE MACHINE
NOS. 31 TO 36, INCL.

Illustrated by adjoining cut.

TABLE OF SIZES AND PRICES

No	Horse-power	Extreme Dimension			Tappings		Shipping Weight, lbs.	Capacity Number Sweepers	List Price
		Length Inches	Width Inches	Height Inches	Air Main Inches	Exhaust Inches			
31	3	91	27	79	2	2	1,500	1	\$1,400
32	5	97	32	89	2½	3	2,000	2	2,000
33	7½	114	42	89	3	3	2,500	3	2,800
34	10	128	42	96	3	3½	2,500	4	3,600
35	12½	128	49	96	4	4	3,000	5	4,250
36	15	132	49	112	4	4	3,000	6	4,750

Continued on next page

Tools, one complete set, nickel-plated, consisting of:—

- 75 ft. 1-inch Vacuum Hose, in one 25 and one 50 ft. length, with 2 slip joint couplings,
 1 Standard 10-inch Carpet and Rug Renovator, swivel back,
 1 18-inch Bare Floor Sweeper, with swivel back,
 1 10-inch Wall Duster, with hinged back,
 1 Tuft Cleaner,
 1 Long Handle, 42 inches,
 1 Short Handle, 12 inches,
 1 Extension Handle, 42 inches,
 1 Goose Neck,
 1 Arm Handle, with cut-off valve,
 1 Radiator Tool,
 1 18-inch Floor Brush, swivel back,
 1 Book Brush,
 1 Upholstery Tool.

*Special Tool Equipment for Schools omits these and has in their place:
 1 10-inch Diamond Shape Floor Sweeper with swivel back, 1 15-inch Fiber Type Bare Floor Tool.

Apparatus is sold f.o.b. factory. After being fully assembled, tested, adjusted and regulated, it is shipped knocked down, ready to be assembled in place and connected with mains and risers, and electric wires. Connections required: Electric mains; exhaust to chimney or other free outlet; main inlet from risers.

Recommended for hotels, office buildings, theaters, churches, clubs, large residences, school buildings, large public institutions, factories, or wherever large cleaning operations are required, and where high-pressure steam (60 pounds and up) is not available for power.

Its distinctive features are: Efficient rotary vacuum pump, with continuous regular suction; large cooling surfaces; wear concentrated at one point (the easily-renewed wearing shoe). This pump has no valve whatever, is simple, compact, long-lived. Another feature is the automatic load-unloading valve, which unloads or relieves the pump of the work of compression as determined by the state of the vacuum in the system—automatically proportioning power consumption to work performed, maintaining in the system the degree of vacuum best suited for cleaning, a uniform degree of suction, insuring smooth, uniform, efficient action of all tools, and safeguarding the motor and pump. Built from one-sweeper up to any capacity by combining units.

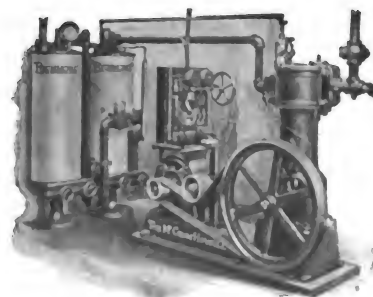
These machines can also be equipped with Gas- or Gasoline-Engine Drive. Particulars on application.

RICHMOND PISTON **VACUUM CLEANING** **MACHINE**—

Vacuum produced by vertical or horizontal double-acting piston pump, belt-driven from motor. Direct or alternating motor, wound for 110 or 220 voltage, as specified. Other currents at special prices. For horsepower see table. The "dry and wet" system of dust separation is used. The dust is first drawn into the dry tank, where about 97 per cent. of it is precipitated to the bottom by centrifugal action. The remainder is drawn through an atomizer, which thoroughly saturates every particle and deposits it in the water of the wet Separator Tank.

Illustrated by adjoining cut.

"A.B.C." SYSTEMS



RICHMOND PISTON BELT-DRIVE
MACHINE
NOS. 132 TO 144, INCL.

TABLE OF SIZES AND PRICES (Nos. 132 to 144 Inclusive)
Dimensions of motor and pump only—separators being on individual bases.

No.	Horse-power	Extreme Dimensions			Tappings				Shipping W't Lbs.	Capacity Number Sweepers	List Price
		Length In.	Width In.	Height In.	Air Main In.	Exhaust In.	Water Service In.	Drain In.			
132	7½	80	31	68	2½	2½	1	1½	5,100	2	\$ 2,800
133	10	81	32	68	2½	3	1	2	6,000	3	3,500
134	15	90	41	72	3	3½	1	2	8,000	4	4,500
135	15	90	41	77	3½	4	1	2	8,800	5	5,250
136	20	90	44	77	4	4	1	2	9,000	6	6,000
137	20	95	44	87	4	5	1	2	12,400	7	6,750
138	25	95	44	87	4	5	1	2	12,600	8	7,500
139	25	95	44	87	4	5	1	2	12,800	9	8,250
140	30	150	47	57	5	6	1	2	18,000	10	9,000
141	35	150	47	57	5	6	1	2	18,500	11	9,750
142	40	160	47	58	5	6	1	2	20,000	12	10,500
143	40	160	47	58	6	7	1	2	20,500	13	11,250
144	45	160	47	58	6	7	1	2	21,000	14	12,000

Larger sizes built to order.

Tools, one complete set, nickel-plated, consisting of:—

- 75 ft. 1-inch Vacuum Hose, in one 25 and one 50 ft. length, with two slip joint couplings,
 1 Standard 10-inch Carpet and Rug Renovator, swivel back,
 1 18-inch Bare Floor Sweeper, with swivel back,
 1 10-inch Wall Duster, with hinged back,
 1 Tuft Cleaner,
 1 Long Handle, 42 inches,
 1 Short Handle, 12 inches,
 1 Extension Handle, 42 inches,
 1 Goose Neck,
 1 Arm Handle with cut-off valve,
 1 Radiator Tool,
 1 18-inch Floor Brush, swivel back,
 1 Book Brush,
 1 Upholstery Tool.

*Special Tool Equipment for Schools omits these and has in their place:
 1 10-inch Diamond Shape Floor Sweeper with swivel back, 1 15-inch Fiber Type Bare Floor Tool.

Apparatus is sold f.o.b. factory. After being fully assembled, tested, adjusted and regulated, it is shipped knocked down, ready to be assembled in place and connected with mains and risers, water-service pipes and sewer, and electric wires. Connection required: Electric mains; main air line; main exhaust water service; discharge to sewer.

Recommended for hotels, office buildings, theaters, churches, clubs, school buildings, large public institutions, factories, or wherever large cleaning operations are required, and where high-pressure steam (60 pounds and up) is not available for power.

Distinctive features: Nos. 132 and 133 have automatic relief valves; 134, 135, 136, 137 and 138 are equipped with automatic load-unloading valves, which maintain a working vacuum between predetermined points to correspond with demands on system. Machines built of best materials by expert workmen, are thoroughly substantial and equal to greatest possible demand for cleaning service. Built from two- to fourteen-sweeper capacity.

These machines can also be equipped with Gas- or Gasoline-Engine Drive or direct-connected to a steam engine. Particulars on application.

PIPE FITTINGS, INSTRUCTIONS TO OPERATE, CO-OPERATIVE SERVICE—**RICHMOND** special smooth-bore fittings should be used with all **RICHMOND** Vacuum Cleaning Machines. Complete instructions for erecting and operating **RICHMOND** Vacuum Cleaning Machines are sent with each outfit.

We will be pleased to place the service of our Engineering Department at the disposal of any architect, builder or owner with vacuum cleaning problems to be solved.

Water Power Vacuum Cleaner Co.

Factory
80-84 W. Mohawk Street

728-732 MAIN STREET
BUFFALO, N. Y.



PRODUCTS—WATER POWER VACUUM CLEANER SYSTEM

DESCRIPTION—This is a "BUILT IN" System designed and intended for the average-size home. The Water Power Vacuum Generator is located in the cellar, and from this location the Vacuum riser is run up through the house, having a baseboard-opening on each floor.

MAIN FEATURES—In this System we do not use any wheels, fans, gears, motors or any moving parts, so there is nothing to wear out or get out of order. We do away with the use of the dust bag or dirt screen of any kind. All the dust, dirt, and impurities that are sucked into the vacuum pipes are sent directly to the generator in the cellar, there, under great force, to be mixed with the water and be dissolved as dirty water and sent into the sewer.

EQUIPMENT—Consists of a Molding Brush; Tufting Tool; Carpet Tool; Drapery, Upholstering and Mattress Tool; Radiator and Corner Tool; Rug Tool; Hardwood Felt-Face Floor Tool; and Tool for deep Tufts. There is also included the WA-PO-VAC Generator, Demonstrating Glass, Nickel-plated Handle in two sections, and twenty-five (25) feet of mercerized covered wire-lined Vacuum Hose. Included with the above equipment is a Mission-finished, brass-trimmed tool case which contains a space and place where each tool is to be permanently kept. This outfit retails for Fifty Dollars (\$50.00) complete.

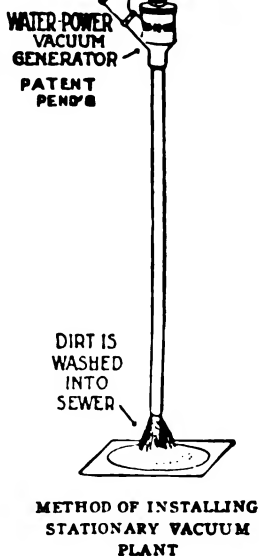
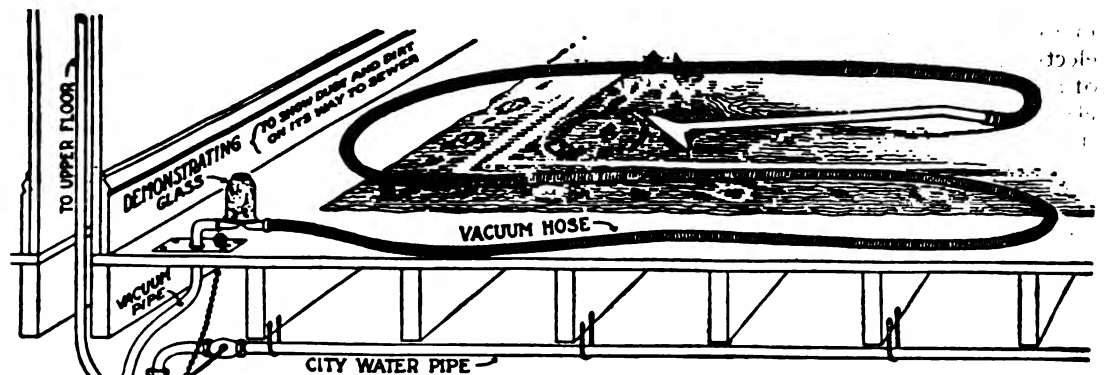
COST OF INSTALLATION—Installing the Water Power Vacuum Cleaner System in the average two-story house is done by a plumber at a cost of about Twenty-five dollars (\$25.00), which price includes all material and time.



WATER POWER VACUUM CLEANER IN OPERATION, SHOWING THE TUFTING TOOL ADAPTED FOR SMALL DEEP TUFTS



WA-PO-VAC GENERATOR



COST OF OPERATION—A slight charge for the water used is absolutely the only expense connected with our WATER POWER VACUUM CLEANER SYSTEM after it is once installed. Inasmuch as, with this system, there are no moving parts to wear out or get broken, there will be no repair bills.

ADVANTAGES—To have a System that can be built in the home, with sufficient efficiency to keep the home properly clean; to do away with the noise of an electrically-operated cleaner; to eliminate the use of the dust bag, box or screen or any kind, and give a System which is mechanically correct and yet is operated without the use of any moving machinery.

Built with the idea that it shall be used by the Housewife or Maid, we have brought this entire System down to such a size that a woman can easily handle it, and have also made it proof against mechanical defects or possibility of getting out of order.

"A.B.C." SYSTEMS

Santo Manufacturing Company

Manufacturers of

Vacuum Cleaning Machines

21st AND ALLEGHENY AVE.,

PHILADELPHIA, PA.

CHICAGO, ILL.

NEW YORK, N. Y.

Represented in nearly every large city in the world

PRODUCTS—VACUUM CLEANING MACHINES, STATIONARY AND PORTABLE, driven by Electric Motor, Hand, Gas or Gasoline, Water Motor, Steam Engine, etc.; SANTO POWER PLANT

FACILITIES—This Company has the largest factory organization in the world devoted entirely to the manufacture of high-grade vacuum cleaning machines. Our large plant at Philadelphia is equipped with most modern facilities for supplying the market throughout the American Continent and abroad.

DESCRIPTION—SANTO-DUPLEX VACUUM CLEANER, STATIONARY—Designed for operation by electric power. Underwriters and electric light companies are unanimous in their approval of this apparatus when installed on ordinary electric lighting circuits. The accompanying illustration shows the electric motor in the lower chamber. The motor is $\frac{1}{4}$ H.P. and is started and stopped by electric push buttons from any floor. The cost of operation is less than 4 cents per hour. Any electrician can quickly make all the connections.

The Santo-Duplex is equipped with two diaphragm pumps, one above and the other below the motor, producing a vacuum of over 9 inches mercury and displacing 45 cubic feet of air per minute. The motor drives both pumps simultaneously at 1200 revolutions per minute, ensuring a continuous positive suction out of the main riser pipe or pipes and the vacuum hose connections.

The dust receptacle in the top of the apparatus—above the motor—is large enough to hold the accumulation of one or two weeks' cleaning.

The tool equipment consists of two 16½-foot lengths of one-inch Vacuum Hose (best quality 3-ply rubber, reinforced with coiled wire) covered with mercerized braid, with necessary nipples and connections; also of various Renovators, Sweepers, Dusting Brushes (soft and stiff), and of several other accessories. Height of machine, 40"; diameter at base, 23"; weight, 180 pounds.

Our diaphragm pump has been run the equivalent of 25 years' of cleaning service without a stop for repairs.

This Cleaner is *proof* against dampness.

"A.B.C." SYSTEMS

Santo



DUPLEX STATIONARY ELECTRICALLY-DRIVEN

POWER REQUIRED—The average lighting circuit in houses, stores and offices contains an electric current force of 110 volts. Lighting companies, as a rule, require 1 H.P. or larger motors to be operated on 220-volt circuits. Therefore we have made our motor a $\frac{1}{4}$ H.P., as this size can be used on circuits of 110 volts. The insurance authorities have approved the Santo-Duplex in all these respects. Motor cannot be overloaded or overheated owing to its *automatic operation* through its pump design. No extra wiring required. Motor can be furnished for any current or voltage.

POWER-DRIVEN TYPE—Where electricity is not available, we offer our high-grade one-sweeper Stationary Vacuum Cleaner Santo-Duplex direct-driven by Gas or Gasoline Engine. This equipment is furnished **complete and ready to run**. The engine is of standard make, 1 H.P. capacity, and can be used for driving other apparatus when the Vacuum Cleaner is not in use.

OTHER MOTIVE POWER—To meet conditions, we can furnish this Santo-Duplex to be operated by belt from line shaft, gasoline engine, water motor or other power. In these cases the machine is built with shaft extending through lower chamber casing on which a suitable pulley or sprocket wheel is mounted. This shaft rotates at about 1000 to 1200 revolutions per minute.

ADAPTABILITY—This highly efficient one-sweeper vacuum cleaner is specially recommended for use in residences, stores, hospitals, apartments, office buildings, clubs, theaters, etc.

PIPING INSTALLATION—Piping and necessary fittings (with exception of the inlets) can usually be obtained from any local plumber's supply house. They should be perfect and free from caves, fins or any roughness on the inside which would tend to catch matches, toothpicks or pins, pieces of lint, or string taken up in the cleaning process. Where bends are necessary, long-turn flush inside-drainage fittings should be used in every case, as shown in cut, Fig. 4.

Ends of all pipe should be cut square, reamed and threaded so that there may be a clear, smooth joint on the *inside*. All joints should be **lead**ed to avoid leakage, as this cuts down the capacity of the machine.



DUPLEX STATIONARY GAS OR GASOLINE ENGINE-DRIVE WHERE CURRENT IS NOT AVAILABLE

Continued on next page

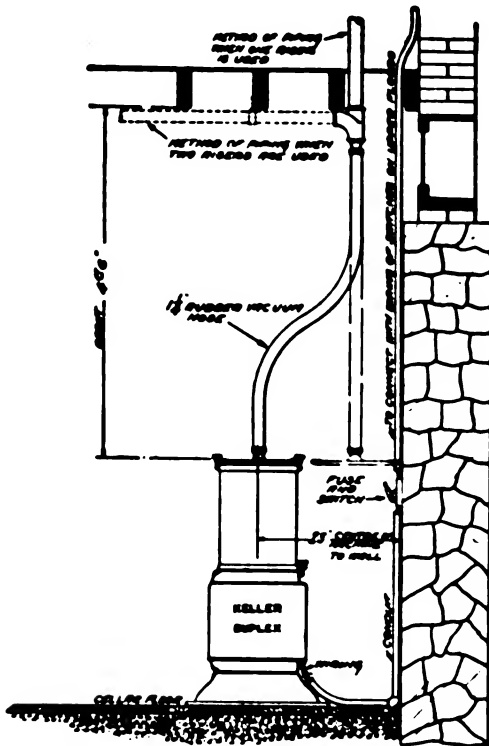


FIG. 1
Method of Locating and Connecting with Piping

Piping should be run in most direct manner, with fewest possible turns or angles. See Fig. 3. In cases of angles, use long-turn drainage elbows with side outlets closed with plugs, so that plug may be removed and any obstruction forced out. See Fig. 4. All piping should be properly supported to prevent shifting, jarring, etc.

Horizontal mains should have a gradual fall towards the machine of about $\frac{1}{8}$ " to the foot, avoiding traps. In no case should a horizontal run be more than 40 feet, and then only when run is exposed. Place machine as nearly central with reference to risers as possible.

WIRING DETAILS—If cleaner is to be started from the basement alone, simply tap the mains, using standard fusible branch block with 15-ampere fuses for 110 volts or 8-ampere for 220 volts, and run No. 12 twin or duplex wires from fuse block to switch and to the machine. The Cleaner to be located 23 inches from cellar wall, as shown in illustration, Fig. 1.

If it is desired to operate Cleaner from different floors as well as from basement, the method of wiring to be employed is shown in Fig. 2. For this arrangement run one pair of No. 12 wires from machine to point where switches are to be located and one pair from switches to the mains. Place Starting Switches 4 feet above floor, near riser.

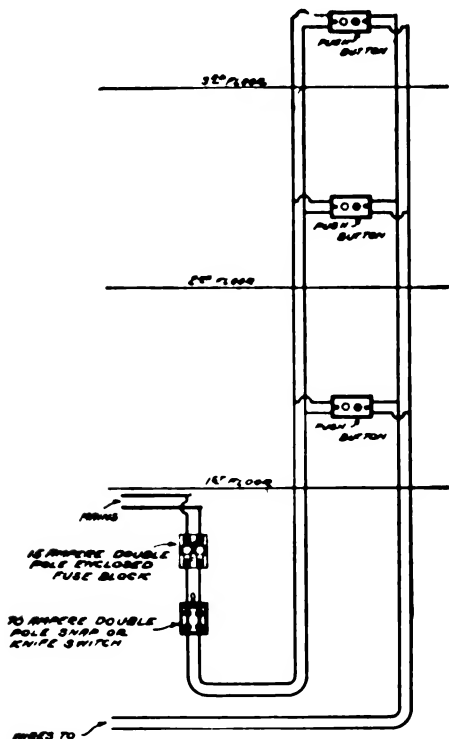


FIG. 2
Method of Wiring for Operation from Various Floors

ADVANTAGES OF THE SANTO-DUPLEX—Its compactness; its adaptability to all electric circuits, to all kinds of motive power and for cleaning all kinds of objects; its efficiency and durability; its completeness of equipment; its easy installation; its economy of operation and maintenance; its low price.

ONE OF OUR OTHER PRODUCTS—SANTO TWIN SWEEPER—Electric—This is our latest product in this line. It embodies the good points of other suction sweepers together with new ideas of our own. One of the principal advantages of the "Twin" consists in having two slots or cleaning nozzles. In this way double the amount of actual cleaning is accomplished with one stroke of the sweeper. Each slot is of large area, while the base is arched for full passage of air to both slots.

GUARANTEE—The Santo-Duplex is guaranteed against defects in material and workmanship for one year after sale. Other Santo Vacuum Cleaners are sold under liberal guarantees. They are all made under our own patents and licensed under basic ones.

"A.B.C." SYSTEMS

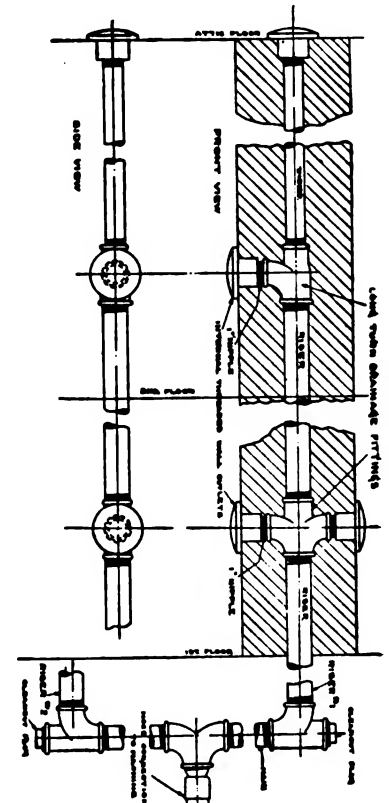


FIG. 3
Piping for 3-Story Building with 2 Risers

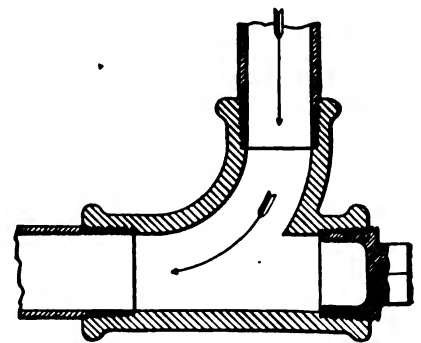


FIG. 4
Drainage Fitting, Flush Inside, Cleanout Plug



WALL INLETS
Screw-Type Flush-Type

PRICES OF SANTO-DUPLEX CLEANERS

Electric Type	\$300	Belt-Driven Type	\$290
Gas or Gasoline Engine, Belted Type, including engine, equipment and belt..	315	Santo Vacuum Cleaner (Electric), complete	125
Water Motor Type, including water motor, chain drive or belt.....	315	Santo Hand-Power Cleaner, complete	35
		Santo Twin Sweeper (Electric)	35

The Blaisdell Machinery Company

Main Office and Works
BRADFORD, PENNSYLVANIA



NEW YORK
90 West Street

PITTSBURGH, PA.
People's Bank Bldg.

BALTIMORE, MD.
BIRMINGHAM, ALA.
ST. LOUIS, MO.

SPOKANE, WASH.

BOSTON, MASS.
202 Congress Street

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RICHMOND, VA.
NEW ORLEANS, LA.
KANSAS CITY, MO.

SEATTLE, WASH.

NORFOLK, VA.
DALLAS, TEXAS
DENVER, COLO.

CHICAGO, ILL.

Commercial Nat'l Bank Bldg.
WASHINGTON, D. C.
Colorado Bldg.

SPARTANSBURG, S. C.
SAN ANTONIO, TEXAS
SALT LAKE CITY, UTAH

PORTLAND, ORE.

Offices in all large Cities of the United States.

PRODUCTS AND SERVICES—VACUUM CLEANING SYSTEMS; AUTOMATIC SEWAGE EJECTORS; "BLAISDELL" AIR COMPRESSORS

We design, manufacture and install VACUUM CLEANING AND VACUUM SCRUBBING EQUIPMENTS, STATIONARY AND PORTABLE, in any Capacity and for any Purpose

NOISELESS OPERATION—The Blaisdell Vacuum Producers in operation are **absolutely noiseless**, due to the use of our patented two-way valve which also increases materially the efficiency.

METHOD OF OPERATION—Electrical Motor, Steam, Gas or Gasoline Engine.

SIZE AND TYPES—Our line is most complete, including every size from the small plant suitable for residential installation to the largest unit which would be demanded. Vacuum pumps are built in both vertical and horizontal types, all embodying those features of design which have received the commendation of the country's leading architects and engineers.

RENOVATORS—Our standard stock of Renovators covers tools for all ordinary requirements, and, in addition, a large number designed for special work.

SEPARATION—Thorough separation of all dust from the air is absolutely essential. By the Blaisdell method 100% efficiency is guaranteed. On small units the dry method has been used for years with complete success. For larger units we employ a system of separation which in action is **absolutely automatic**. Dirt, dust, etc., is deposited in an airtight receptacle from which it is, at intervals, automatically discharged into the sewer. Very little attention is required to keep such a system in proper working order; it insures a vacuum cleaning equipment which is thoroughly *sanitary*.

REGULATION—It is advantageous to install a machine which, if of more than one-sweeper capacity, will, when less than the rated number of sweepers are in operation, consume an amount of power only in proportion to the number of sweepers in use. Close regulation is a matter of extreme importance and directly affects the cost of maintenance. In some instances the saving accomplished by proper regulation in one year's time has exceeded the initial cost of the plant.

SERVICE DEPARTMENT—A special department is maintained for the consideration of all problems relating to the ap-

"A.B.C." SYSTEMS

plication of vacuum cleaning. Our experience, covering a very large number of installations, enables us to advise intelligently. Layouts and suggestions given without any obligation being incurred.

SINGLE-SWEEPER PLANTS FOR RESIDENCES

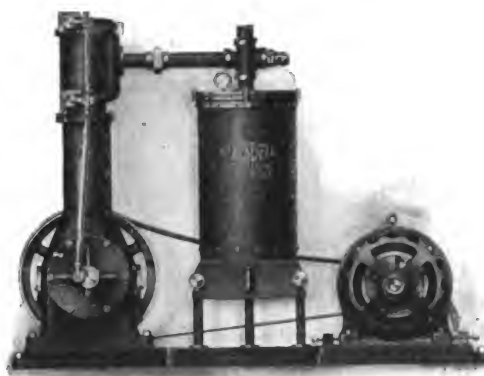
EQUIPMENT—This includes Blaisdell Noiseless Vacuum Pump, Dust Separator, one- or two-horsepower Motor, suitable for current available, all mounted upon cast-iron sub-base.

Horizontal Pipe and Riser, 1½-inch diameter (not supplied by us), with long-turn recessed drainage fittings.

The Residential Unit is substantially as shown in illustration herewith, and consists of a Pump, Dust-separating Tank and Electric Motor, self-contained, mounted upon a substantial sub-base.

This apparatus is electrically-driven, the motor being suited to local current conditions. The motor is adjustable on the base so that it may be utilized to operate other household appliances.

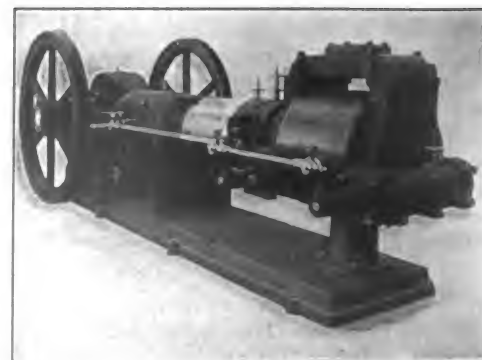
INSTALLATION—There should be provided a riser, 1½-inch diameter black pipe, extending from the most remote outlet and connected to the separator tank. At each floor is attached a wall-service valve (furnished by us). A 1½-inch pipe should be run from the pump to the chimney to carry off the exhaust air. All fittings should be of drainage type, with long-sweep fittings at all bends. (No water or sewer connections are required with this outfit.)



RESIDENTIAL VACUUM CLEANER



AUTOMATIC SEPARATOR



OUR SELF-CONTAINED STEAM-DRIVEN VACUUM PRODUCER

Continued on next page

REMOTE CONTROL—An electrical device can be furnished permitting the operator to start and stop the machine from any floor by the use of a push-button switch. Complete information concerning this feature will be furnished upon application.

OPERATING PARTS—Consist of one 10-inch Carpet and Rug Renovator, one 12-inch Floor Renovator, one Upholstery Tool, one Tapestry Renovator, one Clothes Brush, one Round Wall Brush, necessary Operating Handles, one Demonstrator Glass, one Canvas Tool Bag, three Wall-Service Valves, fifty feet 1-inch Wire-Inserted Rubber Vacuum Hose, one set Operating Instructions.

GUARANTEE—We guarantee the complete Residential Unit and Equipment to be first-class in every respect and free from mechanical defects; and if any part proves defective, due to inferior material or workmanship, within *five years* from date of installation, we will furnish, free of charge, a part to replace same.

PRICES—Residential Unit, \$300.00.

Complete piping for 10-room house will cost about \$50.00; for 15-room house about \$75.00.

SPECIFICATION POINTS—To secure a Residence Apparatus that will give complete satisfaction it is necessary to specify that Vacuum Producer shall be absolutely noiseless in operation; that the separator shall be 100% efficient, and that it shall be absolutely automatic in action.

THE BLAISDELL AUTOMATIC SEWAGE EJECTOR

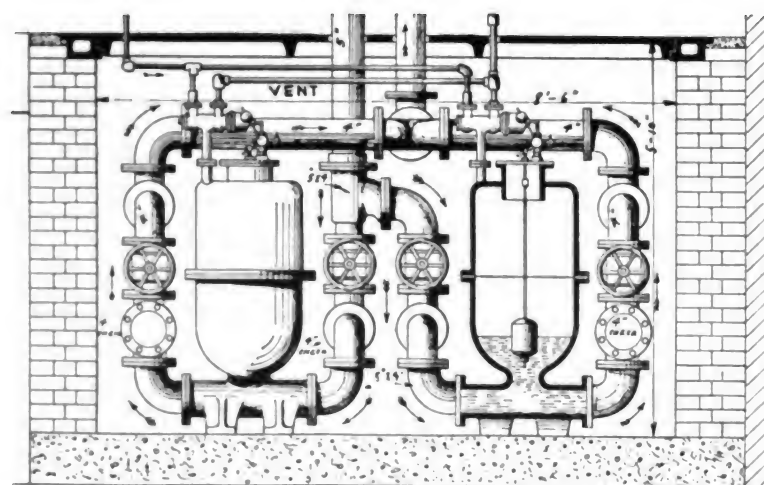
CAPACITIES, OPERATION, ETC.—Standard sizes are 30, 50, 100, 150, 200, 250, 350, 500 and 1000 gallons per minute.

Ejectors are automatic, noiseless in operation and absolutely odorless. They can be operated by compressed air, or by steam used expansively, thereby reducing operating costs to a minimum.

DETAILS—The installation consists of the ejector chambers, together with operating valves, air receiver, one or two air compressors driven by electric motors, steam, gas, gasoline or water, automatically controlled.

The air from the receiver is automatically admitted to the ejector when it has been filled with sewage. The air displaces the sewage, discharging it to the sewer until the ejector is emptied. After the discharge is completed the ejector immediately starts to refill, the sewage flowing in by gravity from the low level house drain. The entire operation is automatic and requires very little attention.

CO-OPERATIVE SERVICES—We design and install Blaisdell Ejector Systems complete, furnishing, where desired, an experienced engineer to oversee the work.



SECTIONAL VIEW OF SEWAGE EJECTOR

CATALOG—We have prepared a catalog which is most complete, describing all the minor details of above apparatus. It is gladly furnished on request.

ENGINEERING—Many problems demand special treatment and expert advice. We would recommend that in such cases architects submit data covering conditions. Same will have careful consideration by our Engineering Department, and recommendations will be promptly made.

BLAISDELL AIR COMPRESSORS

DESCRIPTION—Blaisdell Compressors are used for all purposes to which compressed air is applied. These machines have been on the market for years, and proved best under the most severe conditions of service.

Many features of tested superiority in engine design are embodied in them, such as the enclosed dustproof-type of frame construction, automatic lubrication, balanced cranks, bored crosshead guides, very large bearings and pins. A very large number of sizes and many types. Recommended and used by the country's leading engineers.

PRICE—Can be furnished only upon receipt of necessary data and description of all requirements.



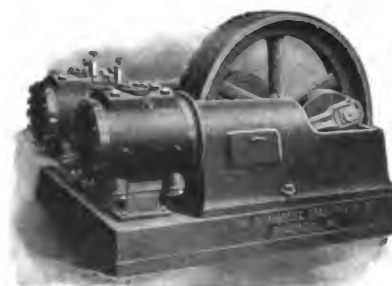
STRAIGHT LINE STEAM-DRIVEN COMPRESSOR



COMPOUND STEAM-DRIVEN DUPLEX COMPRESSOR



MOTOR-DRIVEN TWO STAGE COMPRESSOR



DUPLEX BELT-DRIVEN COMPRESSOR

"A.B.C." SYSTEMS

Monarch Vacuum Cleaner Company

SAN FRANCISCO OFFICE
238 Sacramento Street

Telephones
8760-8761 Madison Square

Offices and Exhibition Parlors
1151 BROADWAY, 26TH AND 27TH STREETS
NEW YORK, N. Y.

Agencies in all Principal
Cities

Factory
Pullman Bldg., ROCHESTER, N. Y.

PRODUCT—THE MONARCH VACUUM CLEANER AND ATTACHMENTS

DESCRIPTION—The Monarch Equipment consists of the Monarch machine (containing Electric Motor, Turbine Vacuum Fans, Dust Receptacle, Observation Glass, etc.) and the following adjuncts: 1. 12-foot wire-wound covered hose. 2. 25-foot covered electric wire and all electric attachments. 3. Curved bow nicked sweepstick (pat.). 4. Aluminum 12-inch carpet sweep; weight, 4 oz. 5. Aluminum 8-inch carpet sweep; weight, 3 oz. 6. Aluminum 4-inch sweep for massage, etc. 7. Aluminum Brush for walls, ceilings, furniture, etc. 8. Aluminum hardwood floor sweeper, cleaner and polisher. 9. Champion Cleaner for pianos, books, radiators, all crevices, etc. 10. Magic Dry Cleaner and Polisher for windows, mantels, etc. (Pat.)

TECHNICAL DETAILS—The housing of our Cleaner is made of best long-drawn Bessemer steel. Full tests by the Mechanics' Institutes of Rochester, N. Y., and New York City prove that such housing has a tensile strength resistance of 37,260 pounds per square inch.

All attachments are of hand-finished brass, quadruply nicked. The Base and Tee Top with handle, enclosing observation glass, are made of alloyed aluminum of great strength.

The electrical appliances are of the highest quality obtainable. The Motors ($\frac{1}{2}$ H.P.) are made by the Robbins & Myers Motor Company, of Springfield, Ohio, who guarantee the motors for 10 years, based on the turbine principle and centrifugal force. Aluminum turbine fans are practically welded to the shaft, making 3600 revolutions per minute. Fans lift shaft under full load free from a ball-bearing thrust, thus making the machine practically impervious to wear. The motor intakes 128,620 cubic inches of air per minute, which passes over and through the motor, keeping it cool. Its operation is noiseless and free from vibration.

The electric cord and hose are of highest class, and all Tools are made of highest grade aluminum, alloyed, thus adding to tensile strength and prevention of marking. Vaseline cups to be filled ONCE EVERY 500 HOURS. Fresh Carbons to be inserted in direct motor machines EVERY 500 HOURS. The Monarch Cleaner can be operated by a child. It is one-third the weight and has three times the efficiency in operation of any other similar apparatus.



THE FEATHERWEIGHT
VACUUM CLEANER

Trade Mark Copyrighted.
Patented Sept. 18, 1894.
Also several Supplementary Patents issued
in 1909 and 1910.



INTERIOR VIEW OF MONARCH CLEANER

PATENT RIGHTS—Fully protected by letters patent in the United States and foreign countries.

PRICE AND MAINTENANCE COST—\$75.00 for gun-metal finish, or \$80.00 for all quadruple silver or black nicked finish, including all listed equipments. This is one-half the price of other machines of this kind. The consumption of electricity by the Monarch is only $1\frac{3}{8}$ cents per hour at the New York rate of ten cents per K. W. hour, whether direct or alternating current.

GUARANTEE—Written Guarantees as follows: Motor, for 10 years; and the whole machine, for 10 years.



CLEANING OUTSIDE OF WINDOWS.
NO DANGER. ALSO MIRRORS, MANTELS, MARBLE, WOODWORK, ETC.

DISPLAY AND SALES PARLORS—At Factory, at various Display Rooms throughout United States and at all Display Rooms of the Edison Electric Light Co. in New York and Brooklyn.

REFERENCES—Adopted and in use in the following places: The White House, Washington, D. C.; the U. S. Navy; U. S. House of Representatives; U. S. Senate; U. S. Lighthouse Service; U. S. Marine Hospitals; U. S. Postoffice; English Navy; Palaces of Emperor Francis Joseph, Austria; N. Y. Edison Co.; Brooklyn Edison Co.; Philadelphia Gen. Elec. Co.; Potomac Gen. Elec. Co., Washington, D. C.; N. Y. Police Dept. and hundreds of Hotels, Office Buildings, Residences and Public and Private Institutions, Hospitals, Churches, Theatres, Clubs, Etc.; also by Doctors, Engineers and thousands of homes throughout the country.



CURVED SWEEPSTICK REACHES EVERYWHERE. CLEANS EVERYTHING. PATENTED AND COPYRIGHTED

"A.E.C." SYSTEMS

CLASSIFICATION PAGE OF SECTION 39

Paint, Varnish, Colors

(Technical Paints and Preservative Coatings see Section 5)

Section Synopsis

A. MATERIALS. Lead, Zinc, Graphite, Litharge, Oxide of Iron; Linseed Oil, Gums, Turpentine; Colors, metallic and mineral, dry and ground in oil; Mortar Colors; Water Colors; Wax

B. READY-MIXED LEAD, ZINC PAINTS, for House, Roof, Marine Work, Iron Work, Exterior Walls, etc.; Enamel Paints, Red Lead Paint, Metal Powder Lacquers, Rubber Paint, etc.

C. FILLERS, HARD-OIL FINISH AND VARNISHES of all

kinds, for natural finish or rubbed cabinet work; Shellac, Japans Dryers, Exterior Varnishes; Stains or Dyes for Interior Wood Work, acid, water, oil; Roof-Shingle Stains; Floor Polishes and Wax

D. Flat and Gloss Wall Finish; Cold Water Paint, for exterior use; Special Calcimines, for interior use; Wall Size

E. Mechanical Painting Apparatus (Spraying Machines, for paint, calcimine, whitewash)

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX			
REGULAR CLASSIFICATION			
A	1	Colors, dry, oil, water, metallic, mineral	
	2	Graphite, plumbago, black-lead	
	3	Gums	
	4	Iron oxide	
	5	Linseed oil	
	6	Litharge	
	7	Mortar colors	
	8	Red lead	
	9	Turpentine	
	10	White lead	
	11	Zinc oxide	
	12	Wax	
B	20	Ready mixed paint:—	
	21	Enamel	
	22	Exterior masonry	
	23	Iron work, general, roof	
	24	Metal powder lacquers, red bronze, gold bronze, aluminum	
	25	General interior and exterior house paint, all kinds	
	26	Metallic, red oxide of iron, graphite, etc.	
	27	Metallic, red lead	
	28	Primers, special	
	29	Rubber paint	
	C	36	Floor polish:—
		37	Composition
38		Wax, prepared	
39		Removers, paint, varnish	
40		Shellac	
41		Shingle stains	
42		Varnishes, japans, hard-oil finish, fillers, dryers, etc., for ordinary wood-finishing and "rubbed" cabinet work	
43		Varnishes for exterior work, house, marine, coach	
44		Wood stains, oil, acid, water	
D		54	Calcimines, special, interior
		55	Cold water paint, exterior
		56	Flat wall finish, patent
	57	Gloss wall finish, patent	
	58	Wall size	
	E	64	Spraying machines, for paint, calcimines, whitewash
		SPECIAL CLASSIFICATION	
		Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
		73	Acidproof, alkaliproof paint (S. 5)
		74	Asphaltum, carbon paint (S. 5)
		75	Brick and cement coatings, waterproofing (S. 5)
		76	Cement floor dustproofers (S. 5)
77		Graphite paint (S. 5)	
78		Metal protective, special, marine (S. 5)	
TRADE NAMES AND BRANDS			
"Adhesion," wall size			
"Amalgam," paint			
"Bronzite," paint and shingle stain			
"Forcite," liquid drier			
"Opalite," calcimine			
"Vel-ve-ta," enamel, wall finish, and cement coating			
"Celox," wood filler			
"Lawson," varnishes			
"Valspar," varnish			
"Chinaline," enamel			
"Flow-On," oil paint			
"Gloss-O-Lite," enamel			
"Granolith," brick and cement coating			
"Rice's Mill White," paints			
"Corporation," wood or metal paint,			
"Nutroco," lead and zinc paint,			
"Crystalite," varnish			
"Dead-Lac," varnish			
"Eggshel-White," enamel			
"Florsatin," floor finish			
"Flo-White," enamel			
"Hyperion," finish			
"No. 20 Surfacer," varnish undercoat			
"Shipoleum," varnish			
"Silex," paste filler			
"Supremis," floor finish			
"White Enamelite," enamel			
"De-Co," varnishes, wood finishes and enamels			
"Eureka," flat wall finish			
"Dextrolite," wall enamel			
"Petrifax," wall enamel			
"Petrifax Calx," flat wall paint			
"Roman Calx," flat wall finish			
"Dull-Kote," flat wall finish, Catalog B 3			
"Dutch Boy Painter," Brand, white lead, Catalog A 2			
"Edinburgh," mortar colors			
"Everlite Coating," enamel paint			
"Wonder Koat Enamel," interior enamel			
"Floorkota," coating			
"Lastkota," interior finish			
"Oilkota," floor coating			
"P. T. P.," varnishes, japans, dryers, fillers and stains			
"Rubkota," interior varnish			
"Hildrolite," flat oil wall finish brick and cement coating, Catalog D 2			
"Holland Enamel," interior work			
"Vernosite," spar varnish			
"I. D. P. Art-o-Fin," floor enamel, shingle stain, and wall finish, S. 4, Catalog 2			
"Keystone," flat wall finish, Catalog D 1			
"Lu-Co-Flat," flat wall finish			
"Wrk-Wel," architectural varnish			
"Lustrole," interior varnish			
"Spede Flat," interior varnish			
"Nomar," exterior varnish, Catalog C 5			
"Under-lack," varnish undercoating, Catalog C 2			
"Verte Antique," copper stain, S. 5, Catalog 3			

Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFERENCE LIST of Catalog Firms making some products of this section but whose Catalogs are placed elsewhere according to their general line of business.					Manufacturers without Catalog data	Sub-Index Numbers				
		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90							1 to 18	19 to 36	37 to 54	55 to 72	73 to 90
C 6	Burbank & Ryder, Charlestown, Mass.			39 41 42 43								Acme White Lead & Color Works, Detroit, Mich.		20 21 22 23 24 25 26	54	58	
A 1	Carter White Lead Co., Chicago, Ill.	6 8 10					Cott-a-lap Co., S. 43 C, Cat. 1 (Paperhangers' size)					Adams & Elting, Chicago, Ill.			43	55 56	
C 1	Chicago Varnish Co., Chicago, Ill.	1	20 28	39 41 42 43			Dexter Brothers Co., S. 5, Cat. 5 (Wall enamels, wood stains and shingle stains)					Advance Paint Co., Indianapolis, Ind.			40 43	56	
B 2	Colonial Works, Brooklyn, N. Y.	1	24	39 40 41 42 43 54	56 57 58	73 74 75 76 77 78	Dixon Crucible Co., Joseph S. 5, Cat. 1 (Graphite, material and paint)					Ajax Paint Co., Indianapolis, Ind.	2 8	24			78
B 1	Devoe & C. T. Reynolds Co., F. W., New York, N. Y.		20 22 24	41 42 43		73	Eureka Chemical Co., The Debevoise Company of Brooklyn, Selling Agents S. 5, Cat. 2 (Flat wall finish and general varnishes)					Allentown Mfg. Co., Allentown, Pa.	10	20 24	40		74 75
D 2	Hildreth Varnish Co., New York, N. Y.			39 41 42	56	75						American Varnish Co., Chicago, Ill.			41		
C 2	Johnson & Son, S. C., Racine, Wis.	12		37 39 41 43			Illinois Damp Proofing Co., S. 4, Cat. 2 (Floor enamel, shingle stain, exterior and interior wall finish)					Anglo-American Varnish Co., Newark, N. J.			41		
B 3	Johnston Paint Co., The R. F. Cincinnati, O.				56	73						Apex Color Works, New York, N. Y.	2 10	20 22		55	
D 1	Keystone Varnish Co., Brooklyn, N. Y.		20	41 42	56	73						Atlantic Paint Co., Cleveland, Ohio		20 21 22 23 24			
C 4	Lilly Varnish Co., Indianapolis, Ind.			41 42			National Roofing Co., S. 26 B, Cat. 3 (General paints)					Atlantic Refining Co., Cleveland, Ohio		20 21 22 23 24			
D 4	Lucas & Co., John Philadelphia, Pa.	1	20 22 24	39 40 41 42 43	56 57	73	Pierce, Butler & Pierce Mfg. Co., S. 29 B, Cat. 5 (Bronzing liquids, for pipes and radiators)					Ault & Wiborg Varnish Co., Cincinnati, Ohio			41		
C 5	Masury & Son, John W., New York, N. Y.		20 22 24	39 41 42 54	55 56 57	73						Averill Paint Co., Brooklyn, N. Y.		24	40		
A 2	National Lead Co., New York, N. Y.	5 8 10										Babcock & Co., John, Boston, Mass.			41		
D 3	U. S. Gutta Percha Paint Co., Providence, R. I.		20 22 24 28		56 57	73 75 77 78						Barrett Co., Chas. A. P., Dayton, Ohio		20 21 22 23 24	41 42 54	55	
C 3	Valentine & Co., New York, N. Y.	1	20	41 42			Toch Bros., S. 5, Cat. 3 (Enamel paints, mortar colors)					Bass-Heuter Co., San Francisco, Cal.	1 2 10	20 21 22 23 24	41 42		
												Becker Varnish Co., R. A., Cincinnati, Ohio			41		
												Bennett Glass & Paint Co., Salt Lake City, Utah		20 21 22 23 24			
												Bereda Mfg. Co., Chicago, Ill.		20 21 22 23 24	41 42 53	55	

See also the catalogs in Section 13, "Building Materials and General Supplies."

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 18	19 to 36	37 to 54	55 to 72	73 to 90		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90
Berry Bros., Ltd. Detroit, Mich.			39 41 42 43			Buffalo Oil Paint & Varnish Co. Buffalo, N. Y.		20 24	40 41 43		75	Cleveland Varnish Co. New York, N. Y.			41 42		
Billings Chapin Co. Cleveland, Ohio		21 22 23 24	41 42			Burdal Co., A. Indianapolis, Ind.		21 22 23 24	41 42 54	55		Clinton Metallic Paint Co. Clinton, N. Y.	7				
Billings-King & Co. New York, N. Y.		21 22 23 24	41 42			Butcher Polish Co. Boston, Mass.	12	36	37			Collier & Sons, H. C. Binghamton, N. Y.	5 9		39		
Binney & Smith. New York, N. Y.	1 4 7 12					Butterworth & Co., C. H. Camden, N. J.		20 21 22 23 24	41 42 54	55		Columbus Varnish Co. Columbus, Ohio			37 41		
Bird & Co., J. A. & W. Boston, Mass.		20	54	55		Cabot, Samuel. Boston, Mass.			40		75	Connors Paint Mfg. Co., Wm. Troy, N. Y.		20 24	41 42	55	
Blackburn Varnish Co. Cincinnati, Ohio			41			Calman & Co., Emil. New York, N. Y.			41 42			Consolidated Roofing & Paint Co. Cincinnati, Ohio	2 8 10	20 21 22 23 24	46 47		
Blanchite Paint Co. New York, N. Y.		20	54	55		Capitol Paint, Oil & Varnish Co. Washington, Pa.		20 21 22 23 24	40 41 42			Coolidge & Sons, F. J. Atlanta, Ga.	1 7 10 12	20 24	37 39 40 41 43		78
Boston Varnish Co. Everett, Mass.		20	41			Carpenter-Morton Co. Boston, Mass.	2	20 24	37 41 43			Diamond Wall Finish Co. Grand Rapids, Mich.			54	55	
Bowen's Sons, S. Philadelphia, Pa.		20	41 42			Cawley-Clark & Co. Newark, N. J.	2 8 10	20 21 22 23 24	40 41 42			Eagle Paint & Varnish Co. Pittsburgh, Pa.		24	41 42 43		
Boydell Bros. White Lead and Color Co. Detroit, Mich.		20 21 22 23 24				Cawn Mining & Mfg. Co. Canton, Ohio		22 24	41		78	Eagle Whitelead Co. Cincinnati, Ohio	10				
Boyle & Co., A. S. Cincinnati, Ohio			37			Century Mfg. Co. Buffalo, N. Y.	1	20 36	37 38 42 54			Eberson Paint Co. St. Louis, Mo.		21		56	75
Bradford & Co., John. Wilmington, Del.	1	20 24	40 43		78	Chase, Roberts & Co. Long Island City, N. Y.			41 42			Empire Varnish Co. Cleveland, Ohio			41		
Bradley & Vrooman Co. Chicago, Ill.		20 24	40 42 54			Chattanooga Paint Co. Chattanooga, Tenn.	7				78	Essex Varnish Co. Newark, N. J.			41		78
Bridgeport Wood Finishing Co. New Milford, Conn.			41 43			Cheesman & Elliot. New York, N. Y.		20 21 22 23 24				Exold Mfg. Co. New York, N. Y.			38		
Briggs & Co., John. Boston, Mass.		20 21 22 23 24				Chicago Wood Finishing Co. Chicago, Ill.			40 41 43			Fairbanks Co. New York, N. Y.				64	
Brinister Co. Los Angeles, Cal.		20 21 22 23 24	41 42			Childs & Co., Chas. M. New York, N. Y.		20 21 22 23 24				Felton, Sibley & Co. Philadelphia, Pa.		20 21 22 23 24	41 42		
Brown Shingle Stain Co. Chas. H. New York, N. Y.			40			Chicago Paint Co. New York, N. Y.		20 21	41			Florida Paint Co. Philadelphia, Pa.	24				
Buffalo Enamel & Stain Co. Buffalo, N. Y.		20 21 22 23 24	41 42									Fondo Co. New York, N. Y.			42		
															41 42		

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 18	19 to 36	37 to 54	55 to 72	73 to 90		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90
Forest City Paint & Varnish Co., Cleveland, Ohio		20 21 22 23 24	41 42			Hammond-Boynton Paint & Chemical Co., Norwich, Conn.			41 42			Indianapolis Paint & Color Co., Indianapolis, Ind.	10	20 24		56	
Port Pitt Oil & Paint Co., Pittsburgh, Pa.	1 2 3 4 5 6 7 8 9 10 11 12	20 21 22 23 24				Hanline Brothers..... Baltimore, Md.		24				Ingersoll, O. W.,..... Brooklyn, N. Y.		20 21 22 23 24	41 42		
Fox & Co., M. Ewing..... New York, N. Y.			41 54	55		Harland & Son, William..... Buffalo, N. Y.			41 42			Irvin, Jewell & Vinson Co.,... Dayton, Ohio	2	20 22 24			
Frazer Paint Co.,..... Detroit, Mich.		20 22 23 24				Harrison Bros. & Co., Inc.,... Philadelphia, Pa.	1 2 7 8	20 21 24	41 42 43		75 77 78						
French & Co., Samuel H. Philadelphia, Pa.		20 24	41 42 43 54	55		Harrold, Jr., Co., John..... Newark, N. J.		20 21 22 23 24	41 42 54	55		Jenkins Paint & Oil Co.,..... Norfolk, Va.		20 21 22 23 24	54	55	
Fuller Co., August P. Portland, Me.			43			Hascall Paint Co.,..... Cleveland, Ohio		20 21 22 23 24	41 42								
Fuller & Co., W. P. San Francisco, Cal.	1 5 6 7 8 9 10 11	20 21 22 24 28	37 39 41 43 54	55	75	Hatfield-Bernhard Co., Inc. Seattle, Wash.		20 24	41 43								
Georgia Pine Turpentine Co. of New York, New York, N. Y.			40			Hazard Lead Works..... Hazardville, Conn.		20 21 22 23 24	41 42 54	55		Kay & Ess Co.,..... Dayton, Ohio		20 21 22 23 24	41 42		
German-American Paint Co. Chicago, Ill.		20 24		56		Heath & Milligan Mfg. Co., Chicago, Ill.	1 2 7 8	20 21 24 25	41 42 43			Kellogg, Spencer & Sons..... Buffalo, N. Y.	4				
Gillespie & Sons, Chas. H. Jersey City, N. J.		20	41 43			Hemingway's London Pur- ple Co., Ltd. New York, N. Y.	4 7					Kent & Purdy Paint Co.,... St. Louis, Mo.		20 21 22 23 24	41 42 54	55	
Glidden Varnish Co. Cleveland, Ohio		20	41 42			Hirshberg, Hollander & Co. Baltimore, Md.		20 24	40 43			Keystone Albumen & Paint Co., Philadelphia, Pa.		20 21 22 23 24			
Globe Varnish Co. Pittsburgh, Pa.		20 24	41			Hoffman Paint & Varnish Co. Boston, Mass.		20 21 22 23 24	41 42 54			Keystone Paint & Filler Co. Muncy, Pa.		20 21 22 23 24			
Gould-Gibraltar Paint Co. New York, N. Y.		24				Holland Linseed Oil Co. Chicago, Ill.	8	24	75			King & Co., William H.,... New York, N. Y.		20 21 22 23 24	41 42		
Grace Varnish Co. Chicago, Ill.			41			Howe Varnish Co., Inc.,... Brooklyn, N. Y.		23	41	56		Kirby, Jr., Paint Co., Geo.,... New Bedford, Mass.		20 21 22 23 24	41 42		
Graves Co., N. Z. Philadelphia, Pa.		21 24	41 43			Hutchinson Scott Co.,... New York, N. Y.		20 21 22 23 24	41 42			Kohler-McLister Paint Co.,... Denver, Colo.		20 24	39 40 41 43 54	75 76	
Grippin Mfg. Co.,... Newark, N. J.			41									Kroeger Bros.,..... Baltimore, Md.			41 42		
Hammar Bros. White Lead Co., East St. Louis, Ill.						Illinois Paint Works..... Chicago, Ill.		20 21 22 23 24	41 42			Lakey Co., A. L.,..... Kalamazoo, Mich.		20 21 22 23 24	41 42		
Hammill & Gillespie New York, N. Y.						Isley Double Day & Co.,... New York, N. Y.			54	55							
						Island Chemical Co.,... Baltimore, Md.	40										

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 18	19 to 36	37 to 54	55 to 72	73 to 90		1 to 18	19 to 36	37 to 54	55 to 72	73 to 90			19 to 36	37 to 54	55 to 72	73 to 90
Lawrence & Co., W. W..... Pittsburgh, Pa.	2 10	20 21 22 23 24	41 42 43 54	55		Mitchell Varnish Works..... Camden, N. J.			39 41			Peninsular Paint & Varnish Co., Ltd Detroit, Mich.	1 2 4 5 8 9 10	20 22 23 24 27	37 40 41 43 54	55	75 76 78
Lawrence-McFadden Co..... Philadelphia, Pa.			41 42 43			Moller & Schumann Co..... Brooklyn, N. Y.		20	41 42 43			Penn Paint & Varnish Co..... New York, N. Y.		20 21 22 23 24	41 42		
Lincoln Paint & Color Co.... Lincoln, Neb.		20 21 22 23 24	41 42 54	55		Morgan Paint Co..... Reading, Pa.		20 21 22 23 24	54	55		Perry-Austen Mfg. Co..... Grassmere, Staten Island, N. Y.		20 23			
Lino Paint Co..... Collingwood, Ohio		20 21 22 23 24	41 42			Moser Co., Chas..... Cincinnati, Ohio	1	24				Peters-Pitkin Co..... Benton Harbor, Mich.		20 21 22 23 24			
Lowe Brothers Co..... Dayton, Ohio	1 2	20 21 22 24	40 41 42	56 57 77 78	75 76	Muralo Co..... New Brighton, Staten Is- land, N. Y.			54			Pfaff Varnish & Stain Co.... Cincinnati, Ohio			37 38 39 41 43		
McDonald Paint & Glass Co. Kansas City, Mo.		20 21 22 23 24	41 42			Murphy Varnish Co..... Newark, N. J.	1	20	41 42			Pfenger & Co., Albert..... Hoboken, N. J.	1 2 4 5 8 9 10	20 22 24	41 43 54	55	
McDougall Varnish Co..... Buffalo, N. Y.		20	39 41			Nason & Co., R. H..... San Francisco, Cal.		20 21 22 23 24	41 42 54	55		Pflug & Co., Albert..... Hoboken, N. J.		20 21 22 24	41 42 54	55	
McKinlay, Perkins Co..... Oakland, Cal.		20 21 22 23 24				New Jersey Paint Works.... Jersey City, N. J.	10	20 22 24	37 38 40 41 43	55	78	Phoenix Oil Co. Cleveland, Ohio	7	20			75 78
McMurtry Mfg. Co..... Denver, Colo.		20 21 22 23 24	41 42			Nice, Eugene E..... Philadelphia, Pa.		20 21 22 23 24	41 42			Phoenix Paint & Varnish Co. Philadelphia, Pa.		20 21 22 24	41 42		
McNamara Varnish Works, Michael Detroit, Mich.			41	78		Nikolas & Co., G. J..... Chicago, Ill.		23				Pierce Co., F. O..... New York, N. Y.	1 3 4 5 6 9 10 11 12	20 24	37 38 41 43 54	55	75 76
Macneal & Co., Jas. B..... Baltimore, Md.	1 7	28	41			Northern Paint Co..... St. Paul, Minn.		20 21 22 23 24	41 42			Piteairn Varnish Co..... Milwaukee, Wis.			41 42		
Maire Paint Co..... Minneapolis, Minn.			54	55		North Star Varnish Co..... St. Paul, Minn.			41 42			Pittsburg Varnish Works.... Pittsburgh, Pa.		20 24 28	40 41 42 43	55	75 78
Marietta Paint & Color Co.. Marietta, Ohio.		22 23 24	39 41 54	55		O'Brien Varnish Co..... South Bend, Ind.		20	41 42			Pomeroy & Fischer..... New York, N. Y.			41 42		
Marine Paint Corporation... Norfolk, Va.		20 21 22 23 24	41 42			Ohio Varnish Co..... Cleveland, Ohio			37 39 41	75 76 78		Pratt & Lambert, Inc..... Buffalo, N. Y.		20	41 42 43		
Martin-Senour Co..... Chicago, Ill.	2	20 24	41 46			Palmer-Price Co. Newark, N. J.			39 41 43			Prince Paint Co., J. H..... Boston, Mass.		20 21 22 24	41 42 54	55	
Matheson Lead Co..... Long Island City, N. Y.	8 10					Parian Paint Co..... Atlanta, Ga.		20 21 22 23 24	41 42 54	55		Prince's Metallic Paint Co. . Allentown, Pa.	1				
Menzel & Son, Wm..... New York, N. Y.			40			Parker, Preston & Co. Norwich, Conn.			40	75 76		Rasmussen & Co..... Portland, Ore.		20 21 22 24	41 42 54	55	
Mephram & Co., George S... East St. Louis, Ill.	6					Parrot Varnish Works..... Bridgeport, Conn.			37 41			Rath Mfg. Co..... Philadelphia, Pa.		20 23			78
Mets Paint Co., P. A..... Buffalo, N. Y.		20 21 22 23 24	41 42			Patek Bros..... Milwaukee, Wis.		20 21 22 23 24	41 42 54	55		Rau, Jr., Conrad F..... Philadelphia, Pa.			38 41		
Michigan Paint Co..... Flint, Mich.		20 21 22 23 24	41 42			Patterson-Sargent Co. Cleveland, Ohio		20 22 24	41 42 43 46 47	56		Rice Filler Co., S. E. M..... Newark, N. J.			41 43	55	
						Patton Paint Co..... Milwaukee, Wis.		20 21	41 42 43			Richmond Bros. Cincinnati, Ohio		20 21 22 24	41 42 54		
						Pavson Varnish Co..... New York, N. Y.			41 42			Rinald Bros. Philadelphia, Pa.		20	41 42		
						Pearlee Gailbert Co., Inc. Louisville, Ky.		20 21		75		Rogers-Pyatt Shellac Co.... New York, N. Y.			39		
						Pecora Paint Co..... Philadelphia, Pa.		20 21 24		75		San Francisco Pioneer Var- nish Works San Francisco, Cal	1	20	37 39 40 41 43 54	55	75 76

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sun-Index Number				
	1 to 18	19 to 36	37 to 54	55 to 72	73 to 90		1 to 18	19 to 36	37 to 54	55 to 72	1 to 18		19 to 36	37 to 54	55 to 72		
Schrack & Co., G..... Philadelphia, Pa.		20 21 22 24	41 42			Tam & Nolan Co..... San Francisco, Cal.			41 42			Westcott, Slade & Balcom Co. Providence, R. I.			38 40		
Sherwin-Williams Co..... Cleveland, Ohio	1 5 10	20 24	41 42 43	56 75 78		Tarr Paint Co..... Rockport, Mass.		20 21 22 23 24				Western Dry Color Co..... Chicago, Ill.	1				
Sipe & Co., James B..... Pittsburgh, Pa.	5		40 41			Thibaut & Walker Co..... Long Island City, N. Y.			41 42			West Varnish Co..... Everett, Mass.		20 22	40 41 43		
Skat Mfg. Co..... Hartford, Conn.			40 41			Thomas Paint Co., A. H..... Waverley, N. Y.		20 21 22 23 24				Wetherill & Bros..... Philadelphia, Pa.		20 21 22 23 24	41 42 54	55	
Skyo Mfg. Co..... Lexington, Ky.		20 21	41 42	55		Thomson Wood Finishing Co. Philadelphia, Pa.		20 24	41 42			Wetherill & Co., Geo. D..... Philadelphia, Pa.		20 21 22 23 24	41 42 54	55	
Smith & Co., Edward..... Long Island City, N. Y.		20	41 42 43	78		Thurston Co., P. W..... Chicago, Ill.			37 38 43			Wheeler-Clough Co..... Chicago, Ill.			39 41		
Spirittine Chemical Co..... Wilmington, N. C.		28	40	75 78		Tiemann, F. M..... Brooklyn, N. Y.	1		39	55		White Co., A. A..... Boston, Mass.		20 21 22 23 24	41 42		
Spray Motor Co..... Buffalo, N. Y.				64		Tousey Varnish Co..... Chicago, Ill.		20	41 42			Whittier Coburn Co..... San Francisco, Cal.		20 21 22 23 24	41 42 54	55	
Standard Varnish Works New York, N. Y.		20	41 42 43	56 57	75	Tredennick Paint Co., L..... Meriden, Conn.		20 21 22 23 24				Wilhelm Co., A..... Reading, Pa.	1	24	41 42		
Starkweather & Williams Co. Providence, R. I.			40	55		Tucker Mfg. Co..... New York, N. Y.		20 21 22 23 24	54	55		Williams & Co., C. K..... Easton, Pa.	1 4 7				
Star Paint & Varnish Co. Cleveland, Ohio	1	20 22 24 28	40 41 42 43	75 76 78		Twin City Varnish Co..... St. Paul, Minn.			41 42			Wilson Paint & Glass Co..... Cincinnati, Ohio		20 21 22 23 24	41 42 54	55	
Sterling Varnish Co..... Pittsburgh, Pa.			41 42			Van Calvert Paint Co..... St. Louis, Mo.		20 21 22 23 24	41 42			Wilson Remover Co..... New York, N. Y.			38		
St. Louis Surfacers & Paint Co. St. Louis, Mo.		24	41 42			Vaughan Paint Co..... Cleveland, Ohio		20 21 22 23 24	41 42			Wiswall Paint Co..... New York, N. Y.		20 21 22 23 24			
Stockton Paint Co..... Stockton, Cal.		20 21 22 24	41 42			Walker Chemical Works..... Harrison, N. J.		20 21 22 23 24	41 42			Wood & Shephard Varnish Co. Brooklyn, N. Y.		20	39 41		
St. Paul White Lead & Oil Co. St. Paul, Minn.		20 21 22 24	41 42 54	55		Weaver & Co., Inc..... Providence, R. I.		24				Woodhouse, Sam F..... Frankford, Philadelphia, Pa.	1	20 22	37 39 40 41 43	55	
Strassel Gans Paint Co. Louisville, Ky.		20 21 22 24 25	41 42			Wellpott Varnish Works, C H W St. Louis, Mo.			41 42			Wood's Sons Co., Henry..... Boston, Mass.	1	24			
Sullivan Varnish Co..... Chicago, Ill.			41 42			Wells Co., James M..... Ogdenburg, N. Y.	7	25				Woolsey Paint & Color Co., C. A. Jersey City, N. J.		21 24	40 54	55	
Sun Varnish Co..... Louisville, Ky.			41 42			Wadsworth, Howland & Co., Boston, Mass.		20 24	41 42 43		75	Yuma Paint Co..... Dayton, Ohio		20 21 22 23 24			
Suydam Co., M. B..... Pittsburgh, Pa.		20 21 22 24 25															
Swift Paint Co..... Pittsburgh, Pa.		26		56													
Tallman Co..... Toledo, Ohio		20 21 22 23 24	41 42 54	55													

Carter White Lead Company

Manufacturers of Pure White Lead, Red Lead and Litharge

CHICAGO, ILL.

Factories

CHICAGO, ILL.

OMAHA, NEB.

Warehouses

ALBANY, N. Y.
 BALTIMORE, MD.
 BUFFALO, N. Y.
 CHICAGO, ILL.
 CINCINNATI, O.

CLEVELAND, O.
 DALLAS, TEXAS
 DETROIT, MICH.
 DULUTH, MINN.
 HOUSTON, TEXAS

KANSAS CITY, MO.
 MEMPHIS, TENN.
 MILWAUKEE, WIS.
 MINNEAPOLIS, MINN.
 NASHVILLE, TENN.

NEWARK, N. J.
 NEW ORLEANS, LA.
 NEW YORK, N. Y.
 OMAHA, NEB.
 PHILADELPHIA, PA.

PITTSBURG, PA.
 RICHMOND, VA.
 ST. LOUIS, MO.
 ST. PAUL, MINN.
 SAVANNAH, GA.

PRODUCTS—PURE WHITE LEAD, RED LEAD AND LITHARGE

TECHNICAL DESCRIPTION—"Carter" White Lead is a high-grade and standard product, noted for its extreme whiteness, firmness, superior body, uniformity and great durability because perfectly corroded by a modern and scientific process. Architects should not fail to specify "Carter" on jobs calling for soft, clear, delicate and durable tints. "Carter" Coach and Car Lead is a particularly high-grade product, especially ground with reference to interior work; it is extremely white and fine; it flats well; equally good for exterior work. "Carter" Red Lead is used as a metal preservative on galvanized iron and other metal surfaces.

HOW TO SPECIFY.—GENERAL—Before any paint is applied, woodwork shall be dry. Apply no paint when raining or snowing. All knots or sappy places shall be varnished with best grain-alcohol shellac.

WHITE LEAD FOR EXTERIOR—Priming Coat shall be a thin coat of "Carter" white lead, raw linseed oil and turpentine, properly brushed into pores. All nail holes and other defects in surface shall be puttied thoroughly after priming coat is dry. Second and third coats shall be "Carter" white lead, pure well-settled raw linseed oil, pure turpentine and drier, mixed to proper consistency, and colored as directed.

WHITE LEAD FOR INTERIOR WORK—Surface shall be put into proper condition for paint, all dust, dirt and loose paint, etc., being removed. All knots and sappy places shall be coated with pure grain-alcohol shellac. Priming coat shall be a thin coat of "Carter" white lead (Coach and Car preferred), pure turpentine and white turpentine Japan drier, properly mixed and thoroughly applied.

Putty all nail holes, cracks and other interstices with linseed-oil putty, composed of equal parts of "Carter" lead and whiting, after priming coat is thoroughly dry. Second and third coats shall be "Carter" lead (Coach and Car preferred), pure well-settled linseed oil, pure turpentine and pure turpentine white drier, colored as directed.

"A.B.C." SYSTEMS

Paint shall be well brushed out and enough time allowed to elapse between coats to insure perfect drying.

RED LEAD—Thoroughly clean all steel and iron work and shop-prime all surfaces with a coat of "Carter" red lead and pure linseed oil, mixed in proportions of 28 lbs. of "Carter" dry red lead to 2-3 gal. raw and 1-3 gal. boiled linseed oil. Surfaces inaccessible after assembling or erection shall be given two shop coats. After erection any abrasions shall be retouched and the whole given one additional coat.

IDENTIFICATION—To insure "Carter" Lead being used as per specification, look for name "Carter" in white letter in red outline on the side of every keg. "Carter" lead is packed in improved steel kegs.



THE 100-POUND PACKAGE



THE 50-POUND PACKAGE FITTED WITH BAIL

GUARANTEE—"Carter" White Lead is sold under the following guarantee, which is printed on head of every package:

"This package contains 92% carbonate of lead; 8% pure Linseed Oil. The Carter White Lead Company will pay \$100.00 and cost of analysis for detection of adulteration in this or any other package bearing this brand. (Our Coach and Car Brand contains but 7% Linseed Oil.)"

DISTRIBUTION—"Carter" White Lead is widely distributed through jobbers and can be purchased of dealers in every state and territory. Architects in New York, Chicago, Philadelphia, etc., may specify "Carter" to be used on a building in California or anywhere else and contractor can secure it.

PRICES—Prices are governed by the fluctuations in the cost of raw materials. "Carter" Lead is sold at the market price for standard brands of strictly pure white lead.

National Lead Company

Paint Materials

NEW YORK

BOSTON

BUFFALO

CHICAGO

PITTSBURG (National Lead and Oil Co.)



TRADE MARK

CINCINNATI

CLEVELAND

ST. LOUIS

SAN FRANCISCO

PHILADELPHIA (John T. Lewis & Bros. Co.)

For our Catalog on Lead Pipe, Tin Pipe, Sash Weights, Came Lead, etc. see Section 35A, Cat. 1

PRODUCTS—PAINT MATERIALS FOR IRON, STEEL, GALVANIZED IRON, METAL ROOFS, CONCRETE, WOOD AND GENERAL HOUSE PAINTING: WHITE LEAD, RED LEAD, LINSEED OIL

Also Lead Pipe, Tin Pipe, Sash Weights, Came Lead, Traps, Bends, Etc.

PAINTING METALLIC SURFACES—It is of the utmost importance in painting metals to have a solid, coherent coating for the undercoats, no matter what the decorative finish may be; and no paint produces this solid, coherent coating so well as Pure Red Lead. For reasons, comparisons, testimonials and other information helpful to those unfamiliar with the subject, write us at any of our branch addresses above. Red Lead Paint gives a maximum of durability and working qualities when mixed and used as follows:

SPECIFICATION FOR USING RED LEAD

STEEL AND IRON WORK—BEFORE ERECTION—Before it leaves the shops, all steel and iron work shall be thoroughly cleaned of all mill scale, dirt, rust and oil, and shall receive one (1) coat of Red Lead paint mixed according to formula below. Surfaces which will be inaccessible after structure is erected shall receive two (2) coats of this paint before erection.

FORMULA: { National Lead Co.'s Pure Red Lead, 30 to 33 pounds
Pure Raw Linseed Oil.....1 gallon
These ingredients shall be thoroughly mixed not longer than 24 hours before being used.

AFTER ERECTION—All structural iron work shall be cleaned after erection and all abrasions in first coat of paint brushed clean with a stiff brush and repainted. All surfaces shall then receive one (1) additional coat of Red Lead paint prepared according to above formula.

All pipes, including automatic sprinklers, steam and hot-water radiators, conducting pipes and interior exposed structural metal work, shall receive two (2) coats as above. Fire-escapes, smokestacks, gutters, down-spouts, and all other exterior metal work shall receive three (3) coats of above with one (1) pound of pure lampblack, ground in oil, added to every 30 pounds of Red Lead used in the third (3d) coat.

Subsequent coats on exposed metal work shall be of NATIONAL LEAD COMPANY'S strictly pure White Lead and Linseed Oil, tinted according to the color scheme employed in the building.

Paint shall not be applied until paint previously applied is thoroughly dry. No painting shall be done in wet or freezing weather.

"A.B.C." SYSTEMS

METAL ROOFS, CORNICES, ETC.—NEW WORK—All new metal, tin, galvanized iron, iron or steel, used for roofing, cornices, valleys, gutters, down-spouts, iron railings, gratings, etc., shall be painted according to the specifications following below. All surfaces shall be carefully cleaned by scrubbing with sand, soap and water, and thoroughly dried before paint is applied. Only when this is done will the paint adhere properly to the metal. This is very important.

FORMULA: { National Lead Co.'s Pure Dry Red Lead....28 pounds
Pure Boiled Linseed Oil..... $\frac{1}{2}$ gallon
Pure Raw Linseed Oil..... $\frac{3}{4}$ gallon
Pure Lampblack, ground in oil.....4 ounces

MIXING—The materials must be thoroughly mixed before application. The mixture shall be of uniform consistency and stirred frequently while in use.

APPLICATION—All surfaces shall receive two (2) uniform coats, as above. When necessary to follow color scheme, finishing coats of NATIONAL LEAD COMPANY'S Pure White Lead and Linseed Oil, tinted to suit, shall be applied over these coats. Each coat shall dry thoroughly before the next coat is applied. Paint on under side of roofing shall dry hard before roofing is laid.

OLD WORK—Metal surfaces not new shall be thoroughly cleaned with wire brush, removing all loose paint and particles, and then painted as above.

PAINTING CONCRETE—The painting of concrete presents no greater difficulties than wood or brick, provided the alkali in the cement has been killed. This can be done by allowing the cement to age for a year, or it can be artificially done by washing the surface of the concrete with carbonic acid water or with a solution of zinc sulphate in water. When dry, paint the same as brick.

PRINTED SPECIFICATIONS FURNISHED—To any architect who desires, we will supply printed specifications, legal cap size, containing full directions for the proper use of Red Lead in the painting of metals, and of White Lead in the painting of wood, concrete, brick, etc.

HOW TO SPECIFY OUR PAINT MATERIALS—Architects who are doing work for a community unfamiliar to them, may be assured of securing the guaranteed product of National Lead Company, if they will specify as follows:

"NATIONAL LEAD COMPANY'S Pure White Lead (Dutch Boy Painter Trade Mark)." Or in case of protective coatings for metal, specify: "NATIONAL LEAD COMPANY'S Pure Red Lead."

F. W. Devoe & C. T. Raynolds Co.

Founded 1754

Makers of Paint, Varnish, Stains, Enamels and Architectural Finishes

NEW YORK
PITTSBURGH

CHICAGO
SAVANNAH

BOSTON
NEW ORLEANS

KANSAS CITY
HOUSTON

PRODUCTS—FULL LINE OF PAINTS, VARNISHES, ARCHITECTURAL FINISHES, ETC.

TECHNICAL DESCRIPTION—Recognized for durability and covering capacity for the protection of buildings against climatic conditions. Constant exposure to heat, cold and storms emphasize that the body and wear-resisting qualities of "Devoe Lead and Zinc Paint," together with the retention of its luster, prove its purity and merit for all exposed surfaces.



Government Analysis testifies that all materials entering into its composition are of the best quality, and assures its purity and full measure.

SPECIFICATIONS FOR NEW WORK OUTSIDE

FIRST, Coat all knots, pitchy and sappy places with "Devoe Orange Shellac" to prevent the pitch from coming through the paint later.

SECOND, Prime with "Devoe Lead and Ochre Primer No. 777." If you cannot get this, use the same shade of "Devoe Lead and Zinc Paint" that is to be used as a finishing coat, adding $\frac{1}{2}$ gallon of pure Raw Linseed Oil to each gallon of paint. This is for priming coat only.

THIRD, Putty all seams and nail holes after priming coat has been applied.

FOURTH, Apply first coat of "Devoe Lead and Zinc Paint" on the primer, adding one quart of turpentine to each gallon of paint.

FIFTH, Apply second or finishing coat of "Devoe Lead and Zinc Paint," adding one quart of Raw Linseed Oil to each gallon of paint, but do not add any turpentine.

It is not economy to be satisfied with but one coat of paint on the primer and we do not guarantee it under any circumstances. You should always put on two coats. If, however, you do put only one coat on the primer you may then add ONE quart of pure Raw Linseed Oil to each gallon of paint used, but you must not put any turpentine in it.

"A.B.C." SYSTEMS

Never use boiled linseed oil in thinning a paint; always use pure Raw Linseed Oil. Boiled oil makes the paint crack.

Our paint should be rubbed out well under the brush and should be spread evenly. Use "elbow grease." Put on thin coats; they will always wear very much longer than thick coats. Always use a good and proper brush.

Never put on a coat of paint until the under coat is thoroughly dry. You should allow at least a week between coats.



DEVOE VELOUR FINISH—Is manufactured in White, Black, and fourteen attractive tints.

A washable oil paint that dries with uniform evenness, giving a soft "water color" effect. It is an ideal paint for all interior work, being strictly sanitary and particularly adapted to hospitals, hotels, public buildings, etc.

Remarkable covering power and a peculiar property of flowing together, the absence of "laps" or streaks. Is free from cracking and chipping tendencies.

SPECIFICATIONS FOR NEW WALLS

PRIMING COAT—Mix equal parts "Devoe Velour Finish" (of desired shade) and Furniture Varnish and apply one coat. Allow sufficient time to dry, then apply—

FIRST COAT, "Devoe Velour Finish." When thoroughly dry, apply—

SECOND COAT, "Devoe Velour Finish."

SPECIFICATIONS FOR NEW WOODWORK

Apply "Devoe Velour Finish" in the same manner as for ordinary oil paint, giving plenty of time between coats for drying.

SPECIFICATIONS FOR BURLAP AND CANVAS

Proceed as for new wall. (See above.)

SPECIFICATIONS FOR IRONWORK

Proceed as for woodwork. (See above.)

Continued on next page

DEVOE HOLLAND ENAMEL—A perfect finish for decorative work of the highest quality.

To produce an "eggshell" or semi-gloss effect, rub finishing coat with fine pumice stone and water, then polish with rotten stone and water.

SPECIFICATIONS

PRIME with two coats "Devoe White Undercoating." When dry, apply—

FIRST COAT, "Devoe Holland Enamel." Sandpaper lightly, when dry, with 00 sandpaper.

SECOND COAT, "Devoe Holland Enamel." This produces a high-gloss finish.

To produce an "eggshell" or semi-gloss effect, rub finishing coat with fine pumice stone and water and finish with rotten stone and water.

DEVOE MARBLE FLOOR FINISH—Made in transparent form and in stains to imitate various woods.

SPECIFICATIONS FOR APPLYING DEVOE MARBLE FLOOR FINISH

This is a floor varnish that for good appearance, good wear and good working qualities is the highest in its class. Use specifications given above, substituting "Devoe Marble Floor Finish" for the words "Pale Interior Varnish."



STAINS—"Devoe Antique Wood Stains" should be used for staining either soft or hardwood on all interior surfaces.

"Devoe Oil Wood Stains" may be used in the same manner as "Devoe Antique Wood Stains," but are especially serviceable for exterior work when finished with "Devoe Vernosite"—the Long-Life Spar Varnish.

"Devoe Wood Stains" (in powder form) are ready for use after dissolving in water, and are made in imitation of fourteen of the most popular woods.

"Devoe Shingle Stains" are made with Creosote Oil and will preserve and beautify the surface to which they are applied.

DEVOE VERNOSITE—Is specified for its brilliancy and general excellence. The Long-Life Spar Varnish. Resists water and sun under all conditions and in all changes of weather. For outside doors, window frames, stables and kennels, and for interior work in bathrooms, butlers' pantries, and on hardwood trimmings around sinks and basins. Send for Vernosite booklet.

DEVOE PALE INTERIOR VARNISH—An exceedingly pale, hard-drying varnish for the finest inside work. It can be rubbed in 36 hours.



SPECIFICATIONS FOR APPLYING VERNOSITE

Use specifications given above for "Devoe Pale Interior Varnish," substituting "Devoe Vernosite" for the words "Pale Interior Varnish."

SPECIFICATIONS FOR VARNISHING OPEN-GRAIN WOODS

FILL with "Devoe Paste Wood Filler."

FIRST COAT, "Devoe Pale Interior Varnish." Sandpaper lightly, when dry, with 00 sandpaper.

SECOND COAT, "Devoe Pale Interior Varnish." Rub with curled hair when dry.

THIRD COAT, "Devoe Pale Interior Varnish," which will produce a full-gloss finish.

DEVOE EGGSHELL FINISH—This will produce a flat or eggshell finish without the necessity of rubbing. A saving of time and expense. Many of the flat or dead finishes now on the market are largely experimental. This is not the case with "Devoe Eggshell Finish," which is a successfully demonstrated accomplishment.



SPECIFICATIONS FOR APPLYING DEVOE EGGSHELL FINISH

Proceed as per specifications for "Devoe Pale Interior Varnish," substituting "Devoe Eggshell Finish" for the last or finishing coat.

SPECIFICATIONS FOR VARNISHING CLOSE-GRAIN WOODS

FIRST COAT, "Devoe White Shellac." When thoroughly dry, apply—

SECOND COAT, "Devoe Pale Interior Varnish." Sandpaper lightly, when dry, with 00 sandpaper and apply—

THIRD COAT, "Devoe Pale Interior Varnish."

SAMPLES—Architects or other interested parties will be furnished upon request with color cards or sample boards showing any particular stain or finish desired.

"A.B.C." SYSTEMS

Colonial Works

BRANCHES

197 High Street
BOSTON, MASS.

326 River Street
CHICAGO, ILL.

Manufacturers and Importers of Paints and Varnishes

233-237 NORMAN AVENUE
BROOKLYN, N. Y.

Telephone
Greenpoint 3071-3073

PRODUCTS—"BRONZITE," a permanent Green Paint; "BRONZITE" SHINGLE STAIN; "VEL-VE-TA" INTERIOR WALL FINISH; "VEL-VE-TA" ENAMEL WALL FINISH; "VEL-VE-TA" CEMENT COATING; "ADHESIUM" WALL SIZE; "AMALGAM" STRUCTURAL PAINT; GRAPHITE PAINTS; MARINE PAINTS.

The "COLONIAL" LINE OF HOUSE PAINTS; "COLONIAL" COLORS-IN-OIL; VARNISHES, STAINS, FILLERS, ENAMELS; "OPALITE," an improved Calcimine; "FORCITE," a liquid Dryer

BRONZITE—A permanent unfading Green Paint of great hardness and stability. Made from a mineral base, "Kolonite." It is the most permanent Green known. Its color is practically indestructible. Bronzite is impervious to chemical action, atmospheric conditions, resists heat and is non-corrosive. It flows freely, has good covering capacity, is unusually smooth, and dries in 24 hours. Prepared in liquid and paste form in six shades of green.

WHEN AND HOW TO SPECIFY—Suitable for exterior wood and metal work, body of houses, shutters, fire escapes, screen doors, etc. Liquid form is ready for use. Paste is to be reduced in pure boiled linseed oil, one gallon to 12½ lbs. of paste.

Price, \$2.00 per gallon for liquid and 12 cents per lb. for paste.

BRONZITE SHINGLE STAIN—By mixing three gallons pure linseed oil, one gallon of turpentine and four gallons creosote with 12½ pounds Paste Bronzite, an unfading, preservative Shingle Stain is obtained.

SPECIFY—For staining shingles, poles, flagstaves and other exterior woodwork.

VEL-VE-TA FLAT—A non-porous, neutral, sanitary, interior flat wall finish of great spreading capacity and cohesion. Made by a special and patented formula. When dry it presents a hard, tile-like finish of velvety appearance through which dampness and discoloration of walls cannot penetrate. It is unaffected by repeated washing, contains no lead and does not show laps, brush marks or streaks, nor does it crack, peel or craze. It is made in 13 colors and white of absolute uniformity. Covers 600 to 700 square feet per gallon, one coat and 400 to 450 square feet per gallon, two coats.

WHEN AND HOW TO SPECIFY—Used in place of lead-and-oil paint, calcimine, etc. Makes a perfect coating and seal on wood, plaster, calcimine, metal, compo-board, burlap, window shades, plaster figures, etc., and on all interior-finish materials. Especially adapted for stippling, frescoing and mural decorating. Cracks and holes to be filled and surfaces to be smooth and dry.

On porous surfaces first apply Vel-ve-ta Primer or a good oil-and-varnish size; allow 12 hours to dry; then apply one or two coats of Vel-ve-ta as it comes from container, allowing 24 hours to dry. An eggshell or semi-gloss surface may be obtained by adding 10 per cent Damar Varnish. Vel-ve-ta Flat makes an ideal and economical undercoating for Vel-ve-ta Enamel.

Price, \$2.00 per gallon.

VEL-VE-TA ENAMEL—A hard, glossy interior finish of high illuminative value. Prepared to withstand extraordinary abuse such as exposure to oil, grease, constant dirtying and repeated washing. Impervious to discoloration, either from age or lack of sunlight. Basically identical with Vel-ve-ta Flat and made in 13 colors and in white of absolute uniformity. Covering capacity same as Vel-ve-ta Flat.

WHEN AND HOW TO SPECIFY—For elevator shafts, stairs, walls and surfaces subjected to excessive wear and friction, oil, grease, soot, smoke, fumes, etc.

Prepare surface and apply same as Vel-ve-ta Flat.

Price, \$2.00 per gallon.

VEL-VE-TA CEMENT COATING—Another Vel-ve-ta product, basically identical with both the Flat and Enamel, but especially prepared for exterior use over concrete, stucco and stone. It makes a perfect waterproof seal, durable and dustproof. Prepared in five unfading colors and white.

APPLICATION—For exterior use on all materials, especially masonry faces. Applied in same manner as Vel-ve-ta Interior Finish.

ADHESIUM WALL-PAPER SIZE—A wall size of unsurpassed strength and adhesiveness. It remains always elastic. Economical to use. A perfect germ destroyer. Adhesium is discolored by hot spots and alkalis on walls, thereby immediately disclosing the presence of these defects. Dissolved in hot water it is ready for use.

WHEN AND HOW TO SPECIFY—Use over whitewashed, painted, sand-finished walls and ceilings; on brick, wood, metal, glass or to prepare surfaces for wall paper, burlap, pressed paper, lincrusta and other heavy coverings.

Dissolve in hot water and apply like ordinary size.

Price, \$1.25 per gallon.

COLONIAL QUALITY COLORS-IN-OIL—Equal to the highest quality colors-in-oil on the market. The pigments, the best procurable, are finely ground under expert supervision in water-cooled mills. The oil and dry colors used are the most expensive, resulting in strong pure colors that are economical to use. Colonial Quality Colors-in-Oil are made in all colors and in all sizes of containers, from half-pounds up to 25 pounds, at competitive prices.

AMALGAM STRUCTURAL PAINT—A preservative coating for wood, metal and other exterior materials. Non-acid, non-corrosive and impenetrable. Its peculiar composition makes it tough, elastic and cohesive on practically all materials. It enters the pores of wood or iron and becomes a perfect seal against which rust is powerless.

It dries quickly, does not harden nor become brittle and withstands heat. Works efficiently under all climatic conditions. Prepared, ready for use, in six colors.

COLONIAL HOUSE PAINT—A pure linseed-oil paint which we manufacture under this brand for every purpose of exterior and interior house work. The brand is standard. The purest and finest materials only are used. Prepared ready for use and stocked in 41 standard colors. Special colors and shades made on order.

SPECIFICATION—Thin first coat with ¼ gallon pure linseed oil for outside use and with turpentine for inside use, if necessary. Allow 18 hours for drying between coats.

Repainted surfaces to be cleaned and smoothed and all blisters and scales burned or cut off with wire brush and sandpaper. For such work apply first coat of Colonial Paint thinned with raw linseed oil, succeeding coats use the paint as furnished in package.

INFORMATION AND CO-OPERATION—A list of buildings decorated with Colonial products, with reports on same from architects and owners; color cards, demonstration samples and particular information on any paint problem gladly furnished upon request.

The Colonial Works will gladly co-operate with the architect and builder to produce the best results from the standpoint of efficiency and economy.

The R. F. Johnston Paint Co.

224-228 MAIN STREET
CINCINNATI, OHIO

PRODUCT—JOHNSTON'S WASHABLE "DULL KOTE" PAINT

DESCRIPTION—Johnston's "Dull Kote" is a sanitary flat paint for the decoration of all interior work, such as the walls, ceilings, woodwork, etc., of theaters, churches, hotels, office buildings, etc. The excellent results obtained by the use of this paint render it desirable for the best work. It is simple of application and produces a fine, smooth, velvety flat finish.



BUCKET OF JOHNSTON'S
"DULL KOTE" PAINT

ADVANTAGES—Johnston's "Dull Kote" paint contains no lead or other poisonous pigments.

It is more economical than enamel paints, oil or varnish, as it flows freely and its covering capacity is large.

Its colors and tints being made from the best pigments are permanent and will not fade.

It is a perfect combination of a varnish and an oil paint.

It may be applied over painted surfaces, wall paper, calcimine, frescoed walls, varnish and cement.

"Dull Kote" paint levels out and flats perfectly, remains elastic and will not crack, peel or flake off.

In finish it combines the soft qualities of calcimine or water paint with the sanitary or washable qualities of oil, varnish or enamel paint, and does not show laps or brush marks.

UNAFFECTED BY WASHING—A surface painted with Johnston's "Dull Kote" paint may be washed with soap and water without its finish being in any way affected.

TINTS—Johnston's "Dull Kote" is made in twenty tints and colors, besides White, Tinting White, Black, and as a Sealer or Surfacer; put up in five-gallon kits, one-gallon, half-gallon, quart and pint cans.

LITERATURE—A handsomely illustrated magazine with information concerning Interior Finish of walls and ceilings, and also color card and color schemes, will gladly be sent free upon request.

COVERING CAPACITY—The covering capacity and number of coats required of "Dull Kote" paints in finishing different surfaces are given in the Specifications following.

One coat of this paint is equal in capacity to two coats of lead.

The great covering capacity of "Dull Kote" paint renders the cost, where an additional coat is required, the same as if lead or the other decorative paints were used.

SPECIFICATIONS FOR JOHNSTON'S "DULL KOTE" PAINT

OVER PLASTER WALL (NEW)—First, fill up cracks and uneven places with plaster of paris or some standard filler. Allow it to dry thoroughly.

Second, apply one coat of "Dull Kote" Sealer or any suitable size. Do not use gloss oil as it softens up under "Dull Kote" and causes the same to gloss in spots and also makes it liable to crack and peel off.

If you cannot get our Sealer, use a hard drying varnish reduced about one-third with benzine. Allow this coat fully twenty-four hours to dry.

"A.B.C." SYSTEMS

If any spots burn through, touch them up with Sealer and allow same to dry before starting with "Dull Kote" Paint.

A small quantity of "Dull Kote" of the shade to be used added to the Sealer or first coat is to be recommended.

Third, apply "Dull Kote" and allow it to dry twenty-four hours.

Fourth, apply second coat of "Dull Kote."

"Dull Kote" Paint will cover as follows on plaster walls over size: Smooth surface walls, from 500 to 600 square feet, one coat; Medium sand-finish walls, from 400 to 500 square feet, one coat; Rough sand-finish walls from 300 to 400 square feet, one coat.

OVER OLD PAINTED WALLS—First, fill up cracks with plaster of paris or some standard filler. Let it dry and size these patched spots with varnish size or Sealer.

Second, if wall is in good condition and no air cracks show, apply "Dull Kote" Paint of shade desired.

Third, if air cracks show, apply glue or varnish size.

Fourth, apply second or finish coat of "Dull Kote" Paint.

Estimate at the rate of about 500 square feet to the gallon on previously painted walls.

OVER METAL SURFACES—Scrape off or remove all rust. Apply "Dull Kote" Paint direct to metal. One or two coats will cover perfectly. One gallon will cover between 500 and 600 square feet.

OVER BURLAP—Fill the burlap with a good oil paint and proceed the same as on plaster walls.

OVER CALCIMINE—First, fill all cracks with plaster of paris or some standard filler.

Second, apply one coat of "Dull Kote" Sealer. Let it dry for twenty-four hours.

Third, apply coat of "Dull Kote" and allow it to dry twenty-four hours.

Fourth, apply second coat of "Dull Kote."

OVER CONCRETE OR CEMENT—First, apply our Special Cement Sealer, to which add one pint of "Dull Kote" of shade to be used.

Second, proceed the same as on plaster walls.

OVER COMPOSITION BOARD—Fill up all joints with some standard filler. Apply "Dull Kote" Special Composition Board Sealer tinted with "Dull Kote" to shade desired; or, size as on new plaster walls.

Apply two coats "Dull Kote," allowing fully twenty-four hours between coats.

FOR WOODWORK—Sandpaper the surface absolutely smooth.

Second, apply "Dull Kote" Paint of shade desired, to which add one-fourth gallon of raw linseed oil. Allow it to dry for twenty-four hours.

Third, apply one or two coats of "Dull Kote" Paint without reducing.

Fourth, if gloss finish is desired, add from one quart to one-half gallon of enamel varnish or use an enamel of shade desired. The enamel should be of same shade as the "Dull Kote."

Fifth, for finest work use double-thick fitch-hair flowing brush.

One gallon of "Dull Kote" will cover about 500 square feet, one coat, on woodwork.

"Dull Kote" Sealer will cover, one coat, approximately as follows:
Smooth walls.....600 to 700 square feet to the gallon
Medium sand-finish walls.....500 to 600 square feet to the gallon
Rough sand-finish walls.....400 to 500 square feet to the gallon
Over wall paper.....400 to 500 square feet to the gallon

Thin "Dull Kote" Paints, if too thick, with pure turpentine or turpentine substitute.

Chicago Varnish Company

Established 1865

Manufacturers of Varnishes, Enamels, Stains and Fillers

Wood Finishes for All Interior and Exterior Architectural Uses

2100 ELSTON AVENUE

CHICAGO, ILL.

NEW YORK CITY
36 Vesey Street

PRODUCTS—SHIPOLEUM, PALEST CRYSTALITE POLISHING, CRYSTALITE, HYPERION FINISH, WOOD-TINTS, NO. 20 SURFACER, DEAD-LAC, EXTERIOR OAK, SUPREMIS FLOOR FINISH, FLORSATIN, EGGSHEL-WHITE ENAMEL, WHITE ENAMELITE, FLO-WHITE ENAMEL, FLAT-LEAD, SILEX PASTE FILLER

SPECIFICATIONS FOR FINISHING INTERIOR STANDING WOODWORK AND PRICES

SHIPOLEUM—For interior woodwork of fine residences, public buildings, etc. For its durability and the fact that it rubs and polishes finely it is specified by leading architects throughout the country. It is especially adapted for hospitals and bath rooms. Price \$3.00 per gallon.

SPECIFY: For open-grain woods (such as oak, ash, etc.), fill the pores with Chicago Varnish Company "SILEX PASTE FILLER," and apply two or three coats of "SHIPOLEUM." On close-grain woods three coats of "SHIPOLEUM" for high-grade work.

PALEST CRYSTALITE POLISHING—Extremely pale, made of the best materials, and gives a beautiful finish when polished or rubbed with pumice stone and water to a dead surface. Price \$4.50 per gallon.

CRYSTALITE—A pale, beautiful rubbing and polishing varnish. Price \$3.50 per gallon.

HYPERION FINISH—Especially adapted to church work, particularly seats, as it dries thoroughly hard. This varnish rubs and polishes finely. Price \$3.00 per gallon.

SPECIFY: For "PALEST CRYSTALITE POLISHING," "CRYSTALITE" and "HYPERION FINISH" (specify as above for Shipoleum).

WOOD-TINTS—These oil stains are in a class by themselves, as they develop the beauty of the grain of the wood instead of covering it up, as do the cheaper stains. They do not raise the grain of the wood, have great covering capacity (about 550 square feet to the gallon), dry with uniform effect and may be used on all of the common woods. For these reasons they are economical and popular with the architect and decorator. Many of the finest experts in the art of wood-staining have informed us that these Wood-Tints are unequaled by any other stains, regardless of price. Price \$2.50 per gallon.

No. 250. Weathered Oak Wood-Tint	No. 252. Mission Oak Wood-Tint
No. 251. Colonial Oak Wood-Tint	No. 253. Pollard Oak Wood-Tint

"A.B.C." SYSTEMS

No. 254. English Oak Wood-Tint	No. 300. Dark-Mahogany Wood-Tint
No. 360. Bog Oak Wood-Tint	No. 305. Light Mahogany Wood-Tint
No. 365. Black Oak Wood-Tint	No. 220. Forest Green Wood-Tint
No. 312. Tobacco Brown Mahogany Wood-Tint	No. 330. Green Wood-Tint
No. 310. Dark Brown Wood-Tint	No. 335. Moss Green Wood-Tint
No. 320. Weathered Pine Wood-Tint	No. 336. Dark Moss Green Wood-Tint
No. 325. Baronial Wood-Tint	No. 350. Golden Wood-Tint

SPECIFY: When the following Wood-Tints are used for standing woodwork:

No. 250. Weathered Oak	No. 325. Baronial
No. 251. Colonial Oak	No. 220. Forest Green
No. 252. Mission Oak	No. 330. Green
No. 253. Pollard Oak	No. 335. Moss Green
No. 254. English Oak	No. 336. Dark Moss Green
No. 360. Bog Oak	No. 350. Golden
No. 320. Weathered Pine	

follow with one coat of "WHITE SHELLAC," one coat of Chicago Varnish Company "No. 20 SURFACER," and one coat of Chicago Varnish Company "DEAD-LAC" for a dead effect. (See Notes "A," "B" and "C" below.)

When the following Wood-Tints are used for standing woodwork:

No. 300. Dark Mahogany	No. 312. Tobacco Brown Mahogany
No. 305. Light Mahogany	
No. 310. Dark Brown	

follow with one coat of "ORANGE SHELLAC," one coat of Chicago Varnish Company "NO. 20 SURFACER," and one coat of Chicago Varnish Company "DEAD-LAC." (See Notes "A," "B," and "C" below.)

NOTE "A"—For window sills and sash substitute for "DEAD-LAC" two coats of Chicago Varnish Company "SHIPOLEUM" Varnish, rubbing the last coat to a dead finish.

NOTE "B"—On open-grain woods (such as oak, ash, etc.), where a filled surface is desired, apply, after the stain is dry, one coat of Chicago Varnish Company "SILEX PASTE FILLER," colored to the correct shade with the Wood-Tint to be used.

NOTE "C"—For gloss varnish effect, or work to be rubbed, substitute for the "NO. 20 SURFACER" and "DEAD-LAC" called for above two coats of "SHIPOLEUM" Varnish, rubbing the last coat if desired.

Continued on next page

No. 20 SURFACER—This is a superior varnish for undercoat work. Has a good color, dries quickly, and is very tough and elastic. Price \$3.00 per gallon.

SPECIFY: See specifications for Wood-Tints.

DEAD-LAC—A varnish giving a "dead" or lusterless effect by simply applying the material with a brush, eliminating entirely the rubbing necessary to obtain the same results with other varnishes. It contains no wax, and work finished with "DEAD-LAC" may be varnished over later if desired. "DEAD-LAC" gives a finish of exceeding beauty which dries hard overnight. It is intended for interior work only and may be used over old varnished surfaces. Price \$3.75 per gallon.

SPECIFY: "DEAD-LAC" is intended for a finishing coat only, and should be specified as given in the specifications above for Wood-Tints.

FOR FRONT DOORS AND OUTSIDE WOODWORK

EXTERIOR OAK—For front doors, verandas, inside blinds, etc. It wears phenomenally, being made of gums especially adapted to weather service. Does not spot or turn white. Price \$4.00 per gallon.

SPECIFY: Exterior oak should be specified as given above for "SHIPOLEUM."

FOR FINISHING FLOORS

SUPREMIS FLOOR FINISH—This was the first distinctive floor varnish, having been on the market for about thirty years. It is still far in the lead of its many imitators because of its great durability, rapid drying, and easy application. It dries hard overnight, does not spot with water nor scratch or mar white. Price \$3.00 per gallon.

SPECIFY: For open-grain woods (such as oak, ash, etc.), fill the pores with Chicago Varnish Company "SILEX PASTE FILLER," and apply two or three coats of "SUPREMIS FLOOR FINISH."

For close-grain woods (such as maple, pine, etc.), apply two coats of "SUPREMIS FLOOR FINISH" (three coats are better) over the bare wood.

N. B.—Never use Shellac as an undercoat on floors.

FLORSATIN—For floors. This varnish was made to meet the demand for a soft wax-like effect on floors, free from the many disadvantages of wax, such as slipperiness, catching and holding disease germs, and the constant care required to keep in condition. It dries hard overnight, giving the surface the exact appearance of wax without rubbing. Price \$3.25 per gallon.

SPECIFY: Use same as above, substituting "FLORSATIN" for "SUPREMIS."

"A.B.C." SYSTEMS

ENAMELS

EGGSHEL-WHITE ENAMEL—A remarkable finish for interior use, producing a rubbed effect without any rubbing whatever, thereby avoiding cutting through the finish on corners, beads and carvings, which is often done where enamel is to be rubbed. For bath rooms it shows great resistance to alkali, ammonia, and to hot water. Made in both white and ivory tints. Price \$4.00 per gallon.

SPECIFY: For undercoats use three coats of Chicago Varnish Company "FLAT-LEAD," and finish with three coats of "EGGSHEL-WHITE" for best work, or two coats for ordinary work. (See Note "D.")

WHITE ENAMELITE—For interior work. An enamel of the finest quality, drying with a beautiful luster, susceptible of high polish; made in both white and ivory tints. Price \$4.50 per gallon.

SPECIFY: Use three coats of Chicago Varnish Company "FLAT-LEAD" for the foundation, followed by two or three coats of "WHITE ENAMELITE." May be left in the gloss, or the last coat rubbed if desired. (See Note "D.")

FLO-WHITE ENAMEL—For interior and exterior use, a coating of the highest quality, combining great beauty with remarkable durability. It has wonderful flowing and covering properties, and is therefore very economical, and is adapted for the best work on wood, brick or plaster, inside or out. We recommend it unqualifiedly for the highest grade work. Price \$5.00 per gallon.

SPECIFY: Three coats of Chicago Varnish Company "FLAT-LEAD" to be used for a foundation, followed by two or three coats of "FLO-WHITE." (See Note "D.")

FLAT-LEAD—A specially prepared undercoat for white enamel work. Will not cause the finishing coats of enamel to turn yellow or crack, as is often the case where ordinary lead or zinc is used. Price \$2.75 per gallon.

SPECIFY: See specifications for enamels. (See Note "D.")

NOTE D—If the wood is highly resinous, a thin coat of white shellac should be applied fifteen hours after the application of the first coat of "FLAT-LEAD."

FILLERS

SILEX PASTE FILLER—Close-grain woods, such as the various pines, birch, maple, cherry, Washington fir, redwood, etc., do not require a filler and none should be used.

Open-grain woods, such as ash, oak, mahogany, chestnut, etc., should be filled, and it is important that a good filler be used, one that will not "sink in" after the work has been finished, thereby spoiling the whole effect. Chicago Varnish Company "SILEX PASTE FILLER" is made from quartz, or rock, and will give good service.

S. C. Johnson & Son

Manufacturers of Johnson's Wood Finishes

RACINE, WIS.

DISTRIBUTERS

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MEMPHIS, TENN., H. A. CARROLL & Co.
NASHVILLE, TENN., WARREN BROS. Co.
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HOUSTON, TEXAS, JAMES BUTE Co.
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RICHMOND, VA., TANNER PAINT & OIL Co.

PRODUCTS—JOHNSON'S ARTISTIC WOOD FINISHES consist of JOHNSON'S WOOD DYE, Sixteen Standard Shades; JOHNSON'S FLAT WOOD FINISH; JOHNSON'S UNDER-LAC; JOHNSON'S PASTE WOOD FILLER, Six Standard Shades; JOHNSON'S FLOOR FINISH No. 1; JOHNSON'S PREPARED WAX AND JOHNSON'S WEIGHTED BRUSHES

have our colors imported from Germany in order to get the best and fastest known to modern science.

JOHNSON'S WOOD DYE—Johnson's Wood Dye is a combined spirit-and-oil stain manufactured for the express purpose of coloring wood. It penetrates deeply, bringing out high lights without raising the grain in the slightest.

It may be applied as easily as an oil stain without any of the disadvantages, being entirely different from other stains on the market which give a "skin-deep" appearance. This dye penetrates and gives the appearance of being the natural color of the wood.

Johnson's Wood Dye is particularly adapted for all interior woodwork for the following reasons: (1) Quick in obtaining results; (2) fastness of color; (3) ease of application; (4) wide range of shades; (5) economical.

(1) **QUICK RESULTS OBTAINED**—Johnson's Wood Dye dries so quickly that dust and dirt have no chance to settle in the finish, as is the case with oil stains, varnish stains, etc.

The finish may be applied within an hour.

(2) **FASTNESS OF COLOR**—Johnson's Wood Dye is manufactured from the very best raw materials procurable; we



JOHNSON'S
WOOD DYE

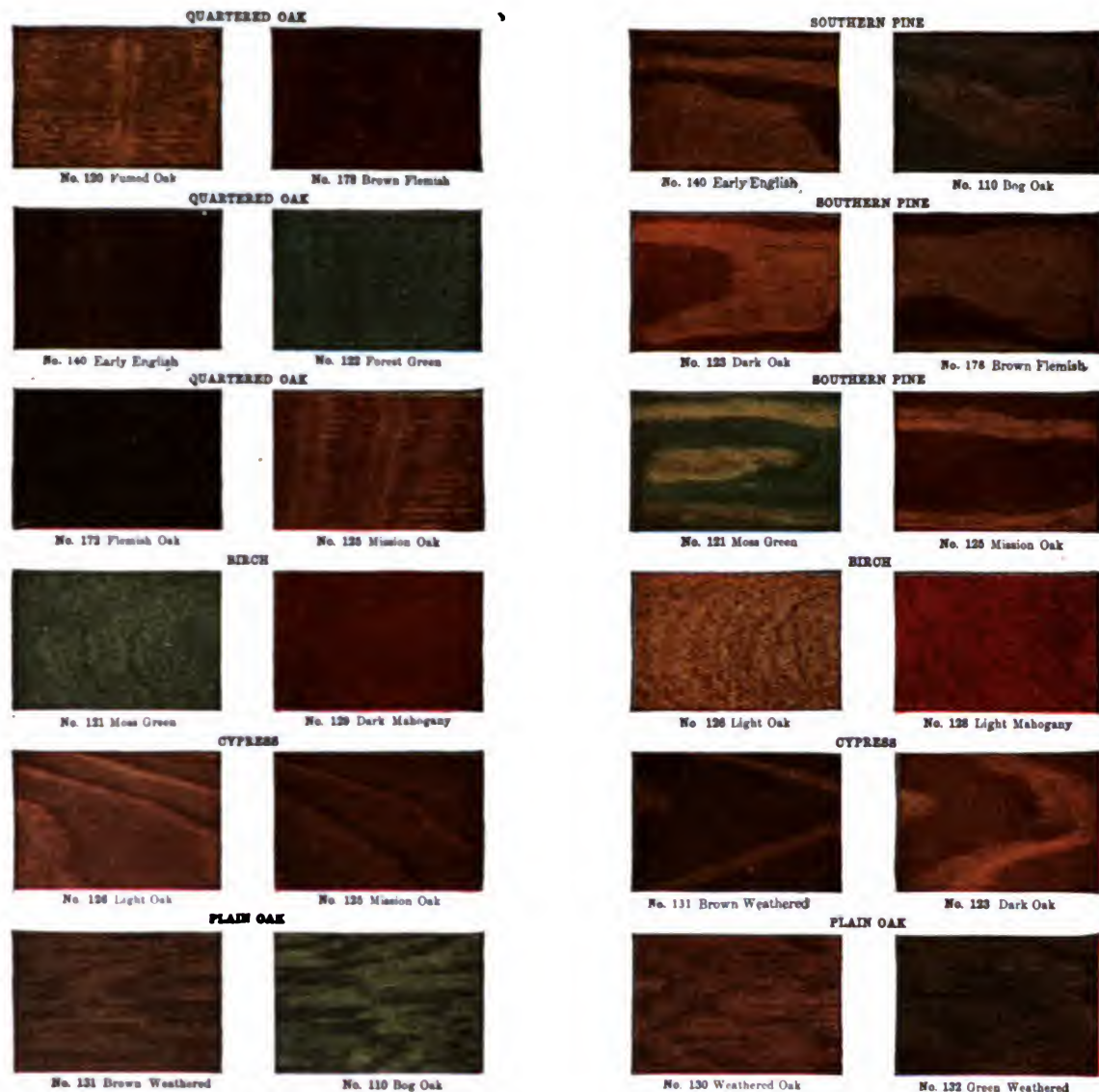
(3) **EASE OF APPLICATION**—Johnson's Wood Dye should be applied with an ordinary brush, keeping it well saturated with the dye. Brush with the grain of the wood. The Dye may be wiped if it is desirable to bring out the figure or grain of the wood more prominently.

(4) **WIDE RANGE OF SHADES**—Johnson's Wood Dye is manufactured in sixteen standard shades:

No. 120. Fumed Oak	No. 128. Light Mahogany
No. 126. Light Oak	No. 129. Dark Mahogany
No. 123. Dark Oak	No. 180. Silver Gray
No. 125. Mission Oak	No. 110. Bog Oak
No. 130. Weathered Oak	No. 121. Moss Green
No. 131. Brown Weathered Oak	No. 122. Forest Green
No. 132. Green Weathered Oak	No. 172. Flemish Oak
No. 140. Early English	No. 178. Brown Flemish

From these, numerous other shades may be obtained by lightening, darkening, and mixing. To lighten any shade add a small quantity of wood or denatured alcohol; to darken, add No. 172 Flemish Oak Dye, which is a jet black. To obtain other shades mix two or more shades in the right proportion. For instance, if you desire a brown mahogany, add a small quantity of No. 125 Mission Oak to either of the mahogany shades of wood dyes.

(5) **ECONOMICAL**—Only one coat of Johnson's Wood Dye is necessary, while oil and creosote stains require several applications. All shades of Johnson's Wood Dye are strong and will stand considerable diluting with wood or denatured alcohol.



PANELS FINISHED WITH JOHNSON'S WOOD DYE

JOHNSON'S FLAT WOOD FINISH—Johnson's Flat Wood Finish is a liquid for that flat hand-rubbed velvety effect. We recommend the use of Johnson's Flat Wood Finish for all woodwork and furniture, but not for floors. With Johnson's Flat Wood Finish you can obtain a flat or rubbed varnish effect at one-third the cost of the rubbed varnish finish.

Apply a thin coat with an ordinary varnish brush over Johnson's Wood Dye or Paste Wood Filler, or varnish. Be careful to brush it well; the more this finish is brushed the better it will look. It will not show laps or streaks, and dries without a gloss in an hour.

On hardwoods we recommend the use of but one coat of Flat Wood Finish, and under ordinary circumstances a single coat is sufficient for soft woods; but upon very soft, porous woods it may be necessary to apply two coats in order to secure the best results.

A high-glossed, varnished woodwork may be easily flat-



JOHNSON'S
FLAT WOOD FINISH

tened by applying a coat of Flat Wood Finish over the varnish. It dries in an hour and will give that beautiful finish so much desired by lovers of the artistic.

JOHNSON'S UNDER-LAC—Johnson's Under-Lac is a spirit finish very much superior to shellac or varnish. It is not thick, sticky, or slow drying like varnish; neither does it dry too quickly like shellac. It is a thin, elastic finish, which will not chip, mar, or scratch, and dries hard in a half hour. Johnson's Under-Lac can be applied by inexperienced workmen with entire satisfaction.

We recommend the use of Johnson's Under-Lac particularly over our Wood Dye and Paste Wood Filler, where a higher gloss is desired than a waxed finish. We especially recommend it on soft woods, as it gives a harder surface upon which to apply the wax.



JOHNSON'S UNDER-LAC

It should also be used as a first-coater under varnish; one coat of Under-Lac and one coat of varnish give a better finish than three coats of varnish without the Under-Lac. For a hand-rubbed finish moss the Under-Lac slightly with steel wool before the wax is applied.

Under-Lac is a perfectly transparent liquid and will not change the color of the wood in the slightest.

PASTE WOOD FILLER—Johnson's Paste Wood Filler is for filling the grain and pores of all woods. It is made of the best and most expensive needle-like silex crystals, pure linseed oil and the best Japan Dryer. Johnson's Paste Wood Filler penetrates, and the crystals fit themselves perfectly into the grain of the wood, and hold fast to it. Paste Wood Filler is manufactured in six shades, as follows:

- No. 10. Natural
- No. 20. Golden Oak
- No. 30. Dark Oak
- No. 40. Antwerp
- No. 50. Green Antwerp
- No. 60. German Gray

Paste Wood Filler is easy to apply. Should be mixed with benzine to the consistency of flowing varnish. Apply with a brush across the grain. Let the filler remain on the wood until the gloss leaves it, and then rub off thoroughly with excelsior or a rough cloth. Be sure to entirely remove the surplus filler before it hardens.



JOHNSON'S PASTE WOOD FILLER

FLOOR FINISH NO. 1—Johnson's Floor Finish No. 1 is prepared especially for kitchen, bath-room, office, store, hospital, school, institution and similar floors which are frequently washed or come in contact with water. It preserves the wood and prevents absorption of dirt and grease. Is applied with a cloth or ordinary varnish brush.

We recommend that new floors of this character be given a coat of Johnson's Paste Wood Filler, desired shade, and a coat of Floor Finish No. 1. Subsequent coats of Floor Finish No. 1 may be applied as required.



JOHNSON'S
FLOOR FINISH NO. 1

JOHNSON'S PREPARED WAX—Johnson's Prepared Wax is a complete finish and may be applied over Wood Dye, Paste Wood Filler, Under-Lac and Johnson's Flat Wood

Finish if desired, or on the bare wood. Apply it lightly or with a cloth, and within five or ten minutes polish with a dry cloth or weighted brush. It immediately produces a beautiful and artistic finish to which dust and dirt will not adhere.

Johnson's Wax Finish will not show scratches or heel-prints, and whenever a part of the finished surface becomes worn, such as doorways, stair-treads and passages, all that is necessary is the re-waxing of the worn spots. The new finish blends perfectly with the old. In fact, Johnson's Prepared Wax becomes perfectly united with the wood itself.



JOHNSON'S
PREPARED WAX

Johnson's Prepared Wax contains a larger percentage of the hard, expensive polishing wax than any other wax finish on the market, and for this reason it covers a larger area and may be brought to a more beautiful and lasting polish. It will not become sticky or tacky in warm weather and warm climates, or from the heat of the body.

JOHNSON'S BLACK WAX—Johnson's Prepared Wax is colorless, and may be successfully used everywhere except over the very darkest Dye and Stains. Over these dark shades the regular Wax is apt to show light in the grain or pores unless great care is taken, so we manufacture our Prepared Wax black for use over the dark shades of Dye. This Black Wax is exactly the same as the regular Wax except the color.

SPECIFICATIONS FOR GENERAL WOODWORK—HARD-WOODS—Apply a coat of Johnson's Wood Dye, desired shade; follow with a coat of Johnson's Flat Wood Finish. For a natural finish fill with Paste Wood Filler No. 10 Natural, excepting upon dark woods, such as red gum and walnut, when Paste Wood Filler No. 30 Dark should be used. Follow with a coat of Johnson's Flat Wood Finish.

SOFT WOODS—Specify same as above excepting when a wax finish is desired, which can be obtained by giving a thin coat of Johnson's Under-Lac with a coat of Prepared Wax over all shades of Wood Dye and Paste Wood Filler.

FILLED GRAIN EFFECTS—To obtain a filled grain effect on open grained woods, such as oak, chestnut, ash, mahogany, etc.: For a natural finish apply a coat of Paste Wood Filler No. 10 on the lighter colored woods, and No. 30 Dark Filler on the darker woods, such as red gum, walnut and mahogany. If the wood is dyed apply the shade of filler to match the dye; No. 30 Dark Filler over all brown shades of Wood Dye, No. 50 Green Antwerp Paste Wood Filler over all green shades of Wood Dye.

CLOSE GRAINED WOODS—Such as pine, cypress, fir, white wood, cedar, etc., it is only necessary to use Paste Wood Filler when the wood is to be finished in its natural color.

WINDOW SILLS AND BASEBOARDS—In kitchen, bath-room, office, and other rooms where the floors are frequently scrubbed or washed with water, give two coats of the best spar varnish over the Wood Dye or Paste Wood Filler.

SPECIFICATIONS FOR FLOORS—HARDWOOD FLOORS—To be finished natural, fill with Johnson's Paste Wood Filler No. 10 Natural, unless the wood is dark, such as red gum, walnut, or mahogany, when Paste Wood Filler No. 30 should be specified. Follow with two coats of Prepared Wax, polishing each application. For a darker finish use Paste Wood Filler No. 30 or one of the other shades. For other colored effects, desired shade of Johnson's Wood Dye, followed by a coat of Paste Wood Filler to match the Dye. No. 30 Filler over all brown and mahogany shades of dye, No. 50 Green Antwerp over all green shades of dye.

SOFT WOOD FLOORS—Such as pine, etc., finish natural by filling the grain with Paste Wood Filler No. 10 Natural. Follow with a coat of Johnson's Under-Lac, and complete the finish by polishing with one coat of Prepared Wax. The Under-Lac gives a harder and better wearing surface upon soft woods. For a darker finish than the natural specify Paste Wood Filler No. 30 Dark. For other colored effects omit the filler, specifying the desired shade of Johnson's Wood Dye to be applied to the bare wood, completing the finish with a thin coat of Under-Lac and one of Prepared Wax.

Kitchen, Bath-room, Pantry, Store, Schoolroom and other floors which receive hard usage require special treatment, as they must be frequently scrubbed with soap and water. We recommend they be given a coat of Paste Wood Filler No. 10, or for a darker finish Paste Wood Filler No. 30 Dark, then give one or two coats of Johnson's Floor Finish No. 1, applying subsequent coats of Floor Finish as required.

New Ballroom Floors which have never been finished should first be given a coat of Johnson's Paste Wood Filler No. 10 if the natural color of the wood is to be retained, or for a darker effect Paste Wood Filler No. 30 Dark. Follow with one application of Johnson's Prepared Wax which should be well polished with Johnson's Weighted Brush. Wait a day or two for the finish to thoroughly harden; the floor is then ready for dancing and may be kept in perfect condition by an occasional application of Johnson's Powdered Wax.

COVERING CAPACITIES:

One gallon of Johnson's Wood Dye will cover approximately 700 sq. ft. on hard woods and 400 sq. ft. on soft woods.

One gallon of Johnson's Flat Wood Finish will cover 500 sq. ft.

One gallon of Johnson's Under-Lac will cover 500 sq. ft.

One pound Prepared Wax will cover 250 sq. ft. one coat.

One gallon of Johnson's Floor Finish No. 1 covers 500 sq. ft.

One pound of Johnson's Paste Filler will fill 40 sq. ft.

PRICES—Retail prices on Johnson's Artistic Wood Finishes are as follows:

Johnson's Wood Dye, in glass containers, \$3.00 per gallon

Johnson's Flat Wood Finish, \$3.00 per gallon

Johnson's Under-Lac, \$2.50 per gallon

Johnson's Paste Wood Filler, No. 25 size, containing about 25 pounds, \$3.00 each

Johnson's Floor Finish No. 1, \$2.00 per gallon

Johnson's Prepared Wax:

No. 1 size, containing about 1 pound, \$0.60 each

No. 4 size, containing about 4 pounds, 2.00 each

No. 8 size, containing about 8 pounds, 4.00 each

SHADES BEST ADAPTED TO DIFFERENT WOODS—From our large experience we give you herewith a list of the shades of Dye and Filler which are best adapted to different woods:

OAK, CHESTNUT, ASH AND OTHER WOODS OF THE SAME CHARACTER—The following shades of Wood Dye can be used: No. 110 Bog Oak, No. 120 Fumed Oak, No. 125 Mission Oak, No. 140 Early English, No. 121 Moss Green, No. 122 Forest Green, No. 130 Weathered Oak, No. 131 Brown Weathered, No. 132 Green Weathered, No. 178 Brown Flemish, and No. 172 Flemish.

"A.B.C." SYSTEMS

All of our six standard shades of Paste Wood Filler can be used on these and similar woods; No. 10 Natural when the natural color of the wood is to be retained.

BIRCH, MAPLE, SYCAMORE AND OTHER SIMILAR CLOSE GRAINED WOODS—We recommend be finished with the following shades of Wood Dye: No. 123 Dark Mahogany, No. 128 Light Mahogany, No. 125 Mission Oak, No. 140 Early English, No. 178 Brown Flemish, or Paste Wood Filler No. 10 Natural if the natural color of the wood is to be retained.

MAHOGANY—Should be finished natural by applying a coat of Paste Wood Filler No. 30 Dark and two coats of Prepared Wax. For a deeper shade of mahogany use either our No. 128 Light Mahogany or No. 129 Dark Mahogany shade of Wood Dye.

RED GUM—Can be finished with any of the mahogany or brown shades of Dye. We especially recommend No. 120 Fumed Oak, No. 123 Dark Oak, and No. 125 Mission Oak shades of Wood Dye. When the natural color of the wood is to be retained we recommend Paste Wood Filler No. 30.

WALNUT—Should be given a coat of Paste Wood Filler No. 30 Dark if the natural color of the wood is to be retained. If a darker shade of finish is desired apply any of our brown shades of Wood Dye. We especially recommend the No. 125 Mission Oak and No. 140 Early English. This wood takes the mahogany shades beautifully also.

CHERRY—For a natural finish use Paste Wood Filler No. 10 Natural. For a slightly darker effect use Paste Wood Filler No. 30 Dark or for a mahogany effect use one of the mahogany shades of Dye.

CYPRESS—Can be finished in the following shades of Wood Dye: No. 110 Bog Oak, No. 126 Light Oak, No. 123 Dark Oak, No. 125 Mission Oak, No. 131 Brown Weathered, No. 140 Early English, No. 178 Brown Flemish, No. 129 Dark Mahogany, or No. 128 Light Mahogany. When a natural finish is desired use Paste Wood Filler No. 10 Natural. Paste Wood Fillers No. 20 and No. 30 can be used upon this wood to obtain very beautiful effects in the lighter shades.

FIR, CEDAR AND SIMILAR WOODS—We recommend be finished in the following shades of Wood Dye: No. 110 Bog Oak, No. 132 Green Weathered, No. 126 Light Oak, No. 123 Dark Oak, No. 125 Mission Oak, No. 130 Weathered Oak, No. 131 Brown Weathered, No. 140 Early English, No. 129 Dark Mahogany. For a natural finish use No. 10 Natural Paste Wood Filler.

REDWOOD—Takes the following shades of Wood Dye: No. 126 Light Oak, No. 123 Dark Oak, No. 125 Mission Oak, No. 140 Early English, No. 121 Moss Green, No. 122 Forest Green, No. 128 Light Mahogany, No. 129 Dark Mahogany. Use Paste Wood Filler No. 10 if a natural finish is desired, or if a slightly darker effect than the natural is desired use Paste Wood Filler No. 30 Dark.

POPLAR, BASSWOOD, WHITE WOOD AND SIMILAR WOODS—We recommend be finished with the following shades of Wood Dye: No. 125 Mission Oak, No. 140 Early English, No. 110 Bog Oak, No. 121 Moss Green, No. 122 Forest Green, No. 123 Dark Oak, No. 128 Light Mahogany, or No. 129 Dark Mahogany.

SOUTHERN PINE—Can be finished with the following shades of Wood Dye: No. 126 Light Oak, No. 123 Dark Oak, No. 125 Mission Oak, No. 140 Early English, No. 178 Brown Flemish, No. 129 Dark Mahogany, or No. 110 Bog Oak. For a natural finish use No. 10 Paste Wood Filler.

FOR SALE EVERYWHERE—Our line is for sale by paint, hardware and drug jobbers everywhere. Also by the leading paint dealer in most every community.

See page 1 for names of distributors.

ARCHITECT'S SAMPLES—Handsome bound case of finished wood panels, loose-finished panels, and liberal samples of any of our preparations will be sent upon request.

BOOKLET AND LITERATURE—A copy of our booklet, "The Proper Treatment for Floors, Woodwork and Furniture," and other information pertaining to our line, will be sent upon request.

Valentine & Company

Established 1832

Manufacturers of Varnishes, Enamels, Oil Colors and Japan Colors

456 FOURTH AVENUE

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PRODUCTS—Full Line of Varnishes: VALSPAR; THE "LUSTRO" LINE OF ARCHITECTURAL VARNISHES, ENAMELS; COLORS IN OIL, COLORS IN JAPAN; CELOX PASTE WOOD FILLER

THE VALENTINE'S VARNISHES

grained woods (cherry, birch, white-wood, maple, etc.) shall be finished as above, except that the filler shall be omitted. Rub down with fine sandpaper, curl hair or moss after the first coat.

VALSPAR—Spar varnishes are noted for durability, but dry slowly and never get really hard and bright. Interior varnishes dry quickly, but lack durability and are useless for exterior work.

After more than ten years of experimenting, Valentine & Company have discovered a process by which they are able to manufacture a long-oil, tough and elastic varnish that dries free of dust in two hours and hard in twenty-four hours, regardless of low temperature or dampness. This varnish, at the same time, has more elasticity and durability than the best spar varnishes. Further, it is **waterproof**; it **never turns white** in water, a quality possessed by absolutely no other varnish.

This really different and superior varnish is **VALSPAR**.

APPLICATION—A varnish of this remarkable combination of qualities means a great deal in actual service, the severer the service the more it means. Valspar is indicated for bathrooms, kitchens, laundries, floors, vestibules, front doors, in fact any exterior or interior work. Its great durability makes it an economical varnish to use.

QUALITIES REQUIRED IN SPAR VARNISH—When writing specifications it is well to state just what the varnish must be able to do to qualify. The following are the important requisites:

FOR INTERIOR AND EXTERIOR WORK—Must be sufficiently pale not to discolor light woods or flooring. Must work freely and flow out smooth. Must dry free from dust in two to three hours. Must dry hard enough in 24 hours to receive next coat. Must be hard and free from tackiness, when dry. Must be waterproof—i. e., not be injured by dew or rain, no matter how long continued, and must not be injured by frequent washing or by hot water from a leaky radiator, and must not turn white when wet. Panel finished with the varnish must stand one week's immersion without turning white (test to be made over black surface), and must stand test of 20 minutes in boiling water and dry out clear and bright and must not turn white. Must dry hard enough in 48 hours to be rubbed down to a flat finish, and when rubbed must not sweat out. Must dry hard enough to be polished in from four to six days. Must have sufficient toughness not to scratch white or show white when marred, even on floors after a period of one year. Must not crack under changes in temperature.

HOW TO SPECIFY VALSPAR—All open-grained woods (oak, ash, walnut, mahogany, etc.) shall be given one coat of Valentine's Celox Wood Filler, and allowed to stand twenty-four hours for hardening, after which apply two (or three) coats of Valspar. All close-

Note—Three coats of Valspar should be used for high-grade work. Where stain is to be used it should be applied before the filler. Valspar must be applied differently from any other Spar Varnish. Flow on a heavy coat, without much brushing.

THE LUSTRO VARNISHES—**INSIDE LUSTRO** is a light-colored, heavy-bodied varnish for interior woodwork, very brilliant and durable. It dries to rub in about forty-eight hours. Unsurpassed for finest panel work. It can be rubbed in either oil or water.

LUSTRO CABINET POLISHING is a very heavy and brilliant varnish for finishing all kinds of interior work. It can be rubbed in about twenty-four hours and produces a very superior and brilliant polish.

LUSTRO ELASTIC FLOOR is a high-grade article especially adapted for hardwood floors. Very durable, producing an excellent and lasting finish. It may be walked on in thirty-six hours after being applied.

LUSTRO ENAMEL WHITE (GLOSS) combines extreme elasticity and hardness— a perfect enamel finish of high luster.

LAWSON LUSTRO

LUSTRO ENAMEL WHITE (FLAT)—Similar to the "Gloss" except that it dries with a dead flat finish.

HOW TO SPECIFY—INSIDE LUSTRO AND LUSTRO CABINET POLISHING—All interior open-grained woods (oak, ash, walnut, mahogany, etc.) shall be given one coat of Valentine's Celox Wood Filler, cleaned off and allowed to stand twenty-four hours for hardening. All interior close-grained woods (cherry, birch, white-wood, maple, etc.) shall be given one coat of white shellac.

Over the above filler and shellac apply one coat of Lustrro Cabinet Polishing (or Inside Lustrro), and when dry rub down with fine sandpaper and follow with one (or two) coat of same material. When a gloss finish is desired, the last coat, after standing three or four days, shall be rubbed down with fine pumice and oil, or with fine pumice and water, followed by a light coat of oil properly wiped off. Where a dead flat finish is desired, the last coat, after standing three or four days, shall be rubbed down with fine pumice and water.

Note—In using Lustrro Cabinet Polishing allow twenty-four hours between coats, and in using Inside Lustrro allow forty-eight hours between coats. Three coats of either should be used for high-grade work. Where stain is to be used it should be applied before the filler or shellac.

LUSTRO ELASTIC FLOOR—All open-grained wood flooring shall be given one coat of Valentine's Celox Wood Filler and two (or more) coats of Valentine's Lustrro Elastic Floor. All close-grained wood flooring shall be given two (or more) coats of Valentine's Lustrro Elastic Floor.

LUSTRO ENAMEL WHITE (GLOSS OR FLAT)—All woodwork which is to be enamel-finished shall be given two coats of white-lead paint and two coats of Valentine's Lustrro Enamel White, using "Gloss" enamel where a high gloss finish is required and "Flat" enamel where a flat or semi-gloss finish is required.

Lilly Varnish Company

Manufacturers of
Architectural Varnishes and Japans

ROSE AND NORWOOD STREETS
INDIANAPOLIS, IND.



PRODUCTS—EXTERIOR AND INTERIOR WOOD FINISHES AND CRYSTAL FINISHES, SPAR VARNISH, LUSTROLE, CHURCH OAK, PARQUETRY FLOOR FINISH, WHITE HARD OIL FINISH, LIGHT HARD OIL FINISH, OIL SHELLAC COATING, DURABLE COACH, HOOSIER SURFACER, AND SPEDE FLAT

DESCRIPTION—We manufacture a perfected line of Architectural Varnishes, the quality of which we guarantee in every respect.

EXTERIOR WOOD FINISH—This varnish is made especially for work exposed to the elements, such as outside doors, windows and vestibules, etc. It dries free of dust in eight hours and hardens through in about three days.

Price—\$4.00 per gallon.

INTERIOR WOOD FINISH—This varnish is designed for the interior of the finest residences, hotels, clubs, etc., where the finish is to be rubbed or polished.

Price—\$3.00 per gallon.

CRYSTAL FINISH, EXTERIOR—This is a fine transparent finishing varnish for all exposed work; it resists the action of the elements. Is hard-drying, extremely durable, pale in color and very lustrous.

Price—\$3.00 per gallon.

CRYSTAL FINISH, INTERIOR—This is a perfectly durable and lustrous finish for all high-class interior work. It spreads freely and evenly under the brush, dries hard in two days, giving a very superior result.

Price—\$2.50 per gallon.

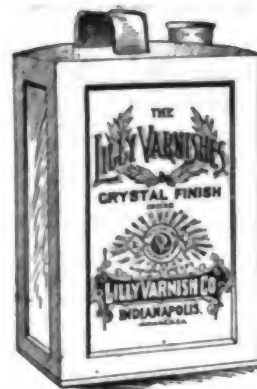
SPAR VARNISH—Made especially for highly finishing and protecting all surfaces exposed to water. It is particularly adapted for use on yachts, vessels, steamships, etc.

Price—\$3.50 per gallon.

LUSTROLE—Made for finishing wood where a hard-drying preservative is required, such as tops of saloon bars, bathtubs, water-closet seats, etc. It will rub and polish to a beautiful luster and resist to an extraordinary degree the influence of moisture.

Price—\$3.00 per gallon.

CHURCH OAK—A high-class varnish for use on church, opera or assembly hall seats, pews, etc. Dries hard and will not



soften under the influence of the heat from the body.

Price—\$3.00 per gallon.

PARQUETRY FLOOR FINISH—A very fine varnish adapted for finishing floors of every description. It is durable and able to withstand wear without discoloring. Is pale in color and easily applied, drying hard over night.

Price—\$2.50 per gallon.

WHITE HARD OIL FINISH—The whitest hard gum oil finish offered to the trade. It is adapted for use on birdseye maple and holly where the beauty and natural color of the wood is to be preserved. Is almost colorless and extremely durable, as well as being a very hard-drying varnish; can be rubbed in two days.

Price—\$4.00 per gallon.

LIGHT HARD OIL FINISH—A positively durable, hard-drying finish that can be used on all interior work where a finish of high perfection is required. It will not scratch white and is not affected by the moisture. Architects specifying this brand can be assured of a high-grade quality interior finish.

Price—\$1.60 per gallon.

OIL-SHELLAC COATING—A hard-drying first coater for all interior woodwork where speed in finishing is of great importance. Drying quickly, it may be sandpapered to a smooth surface, making a solid foundation upon which to apply our Hard-Oil Finishes or Coach Varnish.

Price—\$1.60 per gallon.

DURABLE COACH—Adapted for all work both interior and exterior of all architectural structures, doors, window sash, wainscoting, etc.

Price—\$2.20 per gallon.

HOOSIER SURFACER—This is a pale, hard-drying liquid wood filler which penetrates and seals the pores of the wood, holding out succeeding coats effectively.

Price—\$1.50 per gallon.

SPEDE FLAT—Is intended for Mission or Dull Art Finish. It is not necessary to rub this varnish, but where high-class work is desired we recommend that it be rubbed. To obtain the best results bring up the work in the regular way ready for the finishing coat, and apply one coat of Spede Flat.

Price—\$3.00 per gallon.

John W. Masury & Son

ESTABLISHED 1835

Manufacturers of

Architectural Varnishes

General Paints and Miscellaneous Varnishes



NEW YORK

CHICAGO

MINNEAPOLIS

KANSAS CITY

PRODUCTS—Architectural Varnishes: WHITE ENAMEL, EXTRA WHITE DAMAR, EXTRA WHITE COPAL, CABINET RUBBING, FEDERAL BUILDING, FLAT DRYING, HARD OIL FINISH, Light and Dark, HOUSE PAINTERS' SHELLAC, NOMAR ELASTIC SPAR VARNISH, INTERIOR WOOD FINISH, FLOOR FINISH, CRYSTAL SPAR VARNISH, GLOSS WHITE and FLAT WHITE, MARINE SPAR VARNISH, INTERIOR FINISHING, SEAT FINISHING, WHITE ENAMEL MIXING VARNISH

Coach Varnishes: COLORED PRIMING AND FILLING; SOLID COVERING, COLORED VARNISHES

Miscellaneous Varnishes. PIANO, RAILWAY, AND MARINE VARNISHES

Paints: READY-MIXED PAINTS in All Colors, for Building Work and Other Purposes



varnish especially calculated to offer the maximum resistance to water, soap and other enemies of varnish.

FLAT DRYING VARNISH—This is a transparent varnish, drying with a hard, smooth surface, without gloss. It produces the effect of a rubbed finish without the labor or expense of rubbing. It is equally effective over natural hard woods or stained soft woods. Application is made with a varnish brush; no other manipulation is necessary. The varnish dries overnight and contains no wax.

HARD-OIL FINISH—LIGHT AND DARK—A finish to be especially recommended where a brilliant lustre is desired. When dry, its surface is hard, full and brilliant. In 1-Gal. Can, \$2.25 per Gal.

HOUSE PAINTERS' SHELLAC—A first coating for finishes of various kinds. It prevents suction and will fully hold up succeeding coats of varnish. Its easy working, smooth-flowing and hard-drying qualities recommend it, little sandpapering being necessary; little or no lustre. In 1-Gal. Can, \$2.00 per Gal.

WHITE ENAMEL VARNISH—For enamel work, for mixing with white and very light colors. It will dry hard in about twenty-four hours; may be rubbed and will neither crack nor chip. In 1-Gal. Can, \$4.50 per Gal.

EXTRA WHITE DAMAR VARNISH—Made with selected Batavia Damar Gum and cut only with pure spirits of turpentine. This is the palest Damar Varnish procurable. Heavy in body, it mixes readily and completely with either White Lead or Zinc White. Its working qualities are excellent and its drying rapid. In 1-Gal. Can, \$2.50 per Gal.

EXTRA WHITE COPAL VARNISH—This is the palest Linseed-Oil Varnish produced with Damar Gum. Its application is wide, being equally suitable for interior clear rubbing, or for finish over the most delicate colors, or as a mixing varnish. It will rub readily in from twenty-four to thirty-six hours. In 1-Gal. Can, \$4.50 per Gal.

CABINET RUBBING VARNISH—For undercoating and preparing surfaces for our Nomar Interior Wood Finish. It is dark in color, rubs well in twenty hours and may be applied where cabinet finish is required.

FEDERAL BUILDING VARNISH—As its name implies, this varnish is made to comply with the United States Government Specifications for interior varnish. This guarantees the use, in its manufacture, of pure materials only and assures a

NOMAR ELASTIC SPAR VARNISH—This possesses the greatest durability and is designed expressly for the preservation and finish of front doors, store fronts, window casings and all work continuously exposed to the weather. It is heavily bodied and very elastic, as its name indicates, and gives the greatest protection. It dries free from dust in about eight hours and hardens in about three days. It gives the most beautiful and lasting lustre over natural woods or painted surfaces, and may be cut down to a dull finish with pumice stone and water when sufficiently hard.

SPECIFICATION SUGGESTIONS—Fill with a good standard paste filler all open-grained woods, clean off surface and apply one coat of JOHN W. MASURY & SON'S FEDERAL BUILDING VARNISH, allowing same to stand twenty-four hours before rubbing with sandpaper. Dust off thoroughly and apply another coat of the same varnish, this time allowing about thirty-six hours for drying and hardening; then rub with pumice stone and water, wash off and apply third coat of same varnish.

If a gloss finish is desired, do not again touch the work; if dull or flat finish is desired, rub again with pumice stone and water; if an eggshell gloss is desired, rub with pumice stone and linseed oil. For a high polish rub with rotten stone and sweet oil after rubbing with pumice stone and water.

Close-grained woods take the most satisfactory finish if treated first to a coat of our HOUSE PAINTERS' SHELLAC, followed with two coats of our FEDERAL BUILDING VARNISH, applied as suggested above.

Masury's Pure Colors Ground in Pure Linseed Oil

WARRANTED SUPERIOR TO ANY PAINTS IN THE MARKET

REDS

	Assorted
Indian Red, L and D.....	Cans \$0.19
Venetian Red (in 100-lb. kegs, 9c)	" .11
Tuscan Red, L and D.....	" .22
Royal Red.....	" .11
Western Red.....	" .36
American Vermilion, L and D..	" .28
English Vermilion, L and D....	" —
Rose Pink.....	" .26
Rose Lake.....	" .40
Cardinal Red.....	" .40
Permanent Red.....	" .36
Special Venetian Red, in 12½	" .06
and 25s.....	" .09
Special Indian Red.....	" .12
Brick Red, L, M and D.....	" .36
Cinnabar Red, L and D.....	" .30
Jasper Red.....	" .75
Sagamore Red.....	" .75

BROWNS

	Assorted
Raw and Burnt Umber.....	Cans \$0.17
Raw and Burnt Sienna.....	" .18
Vandyke Brown.....	" .17
Raw and Burnt Umber, for Tint-	" .16
ing.....	" .17
Raw and Burnt Sienna, for Tint-	" .17
ing.....	" .17

BLUES

	Assorted
Prussian Blue—¼, .60; ½, .55	Cans \$0.52
Ultramarine Blue—¼, .34; ½, .29	" .36
Chinese Blue—¼, .60; ½, .55...	" .52
Azure Blue.....	" .35
Cobalt Blue.....	" .38
No. 1 Prussian Blue—¼, .46;	" .38
½, .41.....	" .38

LIQUID COLORS

	1	½	¼	1/16
	Gal.	Gal.	Gal.	Gal.
	Per	Per	Per	Per
	Gal.	Gal.	Gal.	Gal.
Regular Shades.....	\$1.65	\$1.70	\$1.75	\$1.85
Inside White.....	1.85	1.90	1.95	2.05
Pure Blue.....	1.85	1.90	1.95	2.05
Deep Crimson.....	1.85	1.90	1.95	2.05
Woodbine Green.....	1.85	1.90	1.95	2.05
Canary Yellow.....	2.15	2.20	2.25	2.35
Vermilion.....	2.65	2.70	2.75	2.85
French Green.....	2.10	2.15	2.20	2.30
In 5, 10, 15 and 20-gal. kegs, 5c. per gallon less than for gallon cans.				
In half-barrels of 25 gallons, 10c. per gallon less than for gallon cans.				
In barrels of 50 gallons, 15c. per gallon less than for gallon cans.				

VARNISH STAINS

	1/16	¼	½	1
	Gal.	Gal.	Gal.	Gal.
	Per	Per	Per	Per
	Gal.	Gal.	Gal.	Gal.
Cherry.....	\$3.50	\$3.10	\$2.90	\$2.70
Oak.....				
Mahogany.....				
Ebony.....				
Walnut.....				
Rosewood.....				

Apply for Discount

BLACKS

	Assorted
Refined Lamp Black.....	Cans \$0.19
Coach Black.....	" .20
Sign Writers' Black.....	" .22
Ivory Black.....	" .20
Drop Black.....	" .20
Lettering Black.....	" .22
Blue Black.....	" .22

YELLOWS

	Assorted
Chrome Yellow, LL, L, M, O and D O.....	Cans \$0.30
Dutch Pink.....	" .24
Eng. Oxford Ochre (in 100-lb. kegs, 9c.).....	" .11
French Yellow Ochre (in 100-lb. kegs, 9c.).....	" .11
Golden Ochre.....	" .18
Stone Ochre.....	" .11
No. 1 Chrome Yellow, LL, L, M, O and D O.....	Cans \$0.23
Special Yellow Ochre, in 12½ and 25s.....	" .06

GREENS

	Assorted
Chrome Green, L, M, and D.....	Cans \$0.22
Blind and Shutter Green, L, M, and D.....	" .22
Quaker or Olive Green, L, M, and D.....	" .22
Paris Green.....	" .35
Unfading Green.....	" .40
Deep Front Door Green.....	" .22
French Verdigris.....	" .40
Venetian Green.....	" .15

PATENT DRYER

Assorted Cans.....	\$0.10
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OIL STAINS

	1-Gal.	1-Gal.	1-Gal.	Quarts	Pints	1/2-Pints
	Per Gal.	Per Gal.	Per Gal.	Per Gal.	Per Gal.	Per Gal.
Cherry ..	\$2.35	\$2.45	\$2.60	\$2.70	\$2.85	\$3.00
Light Oak						
Dark Oak						
Ant. Oak						
Mahogany						
Ebony ..						
Walnut ..						
Ash						
Chestnut						
Rosewood ..	2.65	2.75	2.90	3.00	3.15	3.30

GLOSS INTERIOR COLORS

IN ELEVEN COLORS

	Per Gallon
1 gallon cans.....	\$2.00
¾ gallon cans.....	2.15
¼ gallon cans.....	2.25

GRAINING COLORS

Light Oak.....	Assorted Cans, \$0.16
Dark Oak.....	
Walnut.....	
Chestnut.....	
Ash.....	
Cherry.....	
Mahogany.....	
Antique Oak.....	

Allowance on list 12½ lb. cans, 1c. per lb.
Allowance on list 25-lb. cans, 2c. per lb.

FLOOR PAINTS

IN TEN SHADES

	1 Gal.	¾ Gal.	½ Gal.
No. 402, Deep Red			
No. 404, Light Oak.....			
No. 405, Yellow..			
No. 406, Dark Lead.....			
No. 408, Dark Yellow.....			
No. 409, Light Lead.....			
No. 410, Dust...			
No. 411, Stone..			
No. 412, Green..	\$1.45	\$1.60	\$1.75
No. 413, Red Buff			
	\$1.65	\$1.80	\$1.95

ROOF AND BARN PAINTS

IN SIX SHADES.

	Per Gallon
1 Gallon Cans.....	\$1.25
Kegs.....	1.20
Barrels.....	1.15

WOOD FILLERS

PASTE

1 lb. 2 lb. 5 lb. 12½ lb. 25 lb. 100 lb. Bbls.	
20c. 20c. 17c. 15c. 12c. 10c., 9c. per lb.	

LIQUID PIGMENT

¼ Pint Pints Quarts ½ Gals. 1 Gal.	
\$3.05 \$2.45 \$2.15 \$1.95 \$1.80, per gal.	
These may be had in the following shades:	
White Transparent	Dark Oak
Light Transparent	Antique Oak
Dark Transparent	Walnut
Cherry	Rosewood
Light Oak	Mahogany

ZINC WHITES

	Net	Assorted
	Per Lb.	Per Lb.
Pure French.....	\$0.11¼	\$0.13¼
Green Seal French.....	.11¼	.13¼
Red Seal French.....	.10¾	.12¾
Globe Snow White.....	.09¾	.11¾
New Jersey Snow White..	.08¾	.10¾
Penn's and Lehig Snow White.....	.07¾	.09¾
Pure French in Varnish...		.20
French No. 1 in Varnish...		.18
Pure French in Japan.....		.30

MASURY'S DISTEMPER COLORS—For Fresco Painters and Decorators—Are put up in jars and furnished in BROWNS, BLACKS, BLUES, GREENS, REDS, LAKES,

YELLOWS and WHITES, in a great many varieties of shades in each color, of unsurpassed quality and at most reasonable prices.

"A.B.C." SYSTEMS

Burbank & Ryder Varnish Co.

Manufacturers of
**Bunker Hill Varnishes, Japans,
Dryers, Fillers, Stains, Etc.**
BOSTON, MASS.



PRODUCTS—VARNISHES, JAPANS, DRYERS, FILLERS, STAINS, ETC.

DESCRIPTION—We manufacture all the various Varnishes, Stains, etc., known to the Trade, but wish to invite particular attention to the following high-grade Products made exclusively by us:

P. T. P.—Especially adapted for **Floors and Exterior Use**, is a high-grade filler or first coater of extraordinary durability, very pale in color. This impervious coating, drying hard in a few hours, will *sandpaper smooth without dusting or gumming the paper*. It will not peel off, blister or become brittle, and resists the action of hot or cold water, steam vapors and all atmospheric conditions. This primer will not mar, bruise, scratch white or raise the grain of the wood.



It imparts a smooth glassy surface with the least possible labor, and one coat holds up the finishing coat of Varnish equal to two ordinary coats of White Shellac. Its pigment is finer and lighter than those used in ordinary fillers, holding in suspension for a great length of time.

P. T. P. is adapted for **High Class Architectural Interior or Exterior Work** and is extensively used in **Hospitals, Schools, Dormitories, Bathrooms, Vestibules, Kitchen Laundries, Stables, and Laboratories**. For floors to be waxed **P. T. P.** is the **Ideal Primer**.

DIRECTIONS—For ordinary work, add one pint of Turpentine to each gallon of **P. T. P.**; or to apply over aniline stains, thin with De-natured Alcohol instead of Turpentine to develop the beauty of the stain.

OILKOTA—A **Light Colored, Hard Drying Oil Coating** for Floors in Office and Public Buildings, Hospitals, Schools, Gymnasiums, etc.

This preparation supplies the demand for a Dressing for Floors, meeting requirements where all Varnishes have failed and Linseed or Paraffin Oils have proven unsatisfactory. It penetrates the fiber of the wood, producing a pleasant dressed effect that holds for many months on floors subject to excessive wear.



Unlike any of the *common floor oils*, **Oilkota** dries hard overnight, is dustproof and germproof, and does not soil the clothing or delicate fabrics coming in contact. This preparation will not cause the floor to become dark or unsightly, and its oily nature makes it waterproof and assures long life, with no brittleness.

Oilkota is a *durable, sanitary, water and dustproof* Floor Dressing.

DIRECTIONS—Apply with a brush or cloth, one or two coats, according to the class of work desired. For refinishing old work thin, with about 25% of Turpentine.

RUBKOTA—A **Dull Finishing Varnish**, extremely elastic, moisture and waterproof. It dries to a *Dull Velvety Finish* perfectly imitating work rubbed in oil, producing a *rich satin effect* and developing the grain of the wood *better than a Gloss Varnish*. Its light body makes it suitable for flowing on new or old work where the surface is perfectly smooth.

Rubkota dries firm overnight and *does not separate like Wax Mixtures*. It is clear, pale, transparent, uniform in color and may be used for the lightest finish.

Rubkota is indispensable on molding or carved work.



DIRECTIONS—For Mission effects, apply one coat of **P. T. P.**; sandpaper or rub with steel wool and finish with one or two coats of **Rubkota**, or an intermediate coat of **Lastkota** may be used if a smooth, deep, rubbed effect is desired. A lustre varnish may be applied at any future time. **Rubkota** should always be used in a moderate temperature for best results.

FLOORKOTA—An extremely pale, tough and elastic Floor Varnish, which is known for its *high gloss and long life*. This product is the result of many years of experimenting to meet the excessive wear to which floors are subjected.

Floorkota resists moisture, steam, hot and soapy water.

Floorkota dries quickly and hard, yet holds its elasticity for years and *positively will not bruise, chip or scratch white under the heaviest wear*.



DIRECTIONS—Apply one coat of **P. T. P.**; sandpaper or rub with steel wool, finish with one or two coats of **Floorkota** according to the effect desired. Two or three coats of **Floorkota** may be used without the **P. T. P.**, if preferred.

LASTKOTA—A **High-grade, Easy-flowing, Finishing Varnish**, which is *strongly recommended* for all Interior Work. It dries promptly, with great brilliancy and durability. It holds its lustre and elasticity for years, and does not become brittle.

It is impervious to moisture, resists the action of hot or cold water, never turning white. It is especially adapted for the highest grade interior work; pale enough for the lightest finish and durable to the hardest usage, and may be used on piazza ceilings, vestibules and other places not directly exposed to the sun's rays.



DIRECTIONS—Apply one coat of **P. T. P.** and one or two coats of **Lastkota**, according to surface and lustre required. It may be rubbed in five days, or a coat of **Rubkota** applied instead.

Keystone Varnish Company

Manufacturers of

Washable Keystona Flat Finish for Walls and Ceilings and Varnishes of Every Description

Cable Address
KEYSTONE, BROOKLYN

71-79 OTSEGO STREET
BROOKLYN, N. Y.



PRODUCTS—ORIGINAL WASHABLE KEYSTONA FLAT FINISH; NO. 100 WHITE ENAMEL; FLAT ENAMEL WHITE; VARNISHES of every description

WASHABLE
KEYSTONA

oil. One coat of priming and one coat of **Keystona** costs about the same as calcimine work; therefore it is the cheaper material of the two, and the trade secures the best wall finish known.

DESCRIPTION—The Original Washable **KEYSTONA FLAT FINISH** for Walls and Ceilings is a scientific combination of certain parts of paint and varnish. It contains neither water, glue nor white lead (which latter carries danger of lead poisoning), yet it gives better results than lead-and-oil paint and dries immediately, producing a most permanent, soft, velvety finish.

Keystona is made in a variety of colors to match the decorative scheme of any room, and can be frescoed, picked out in gold and embellished in relief.

Keystona gives a flatter and softer white finish than calcimine and is used where a better class of work is required.

Keystona is thoroughly washable with ordinary soap and water, maintaining its rich, velvety finish, and furnishes a clean and sanitary surface wherever it is applied.

To prove that **Keystona** possesses these high qualities, we are prepared to give a demonstration free upon request.

SPECIFICATION—For using **Keystona** on Sand-Finish or Smooth-Finish Plastering.

PREPARE WALLS—Look over all plastered surfaces and see that all cracks are cut out and well filled with putty, made from **Keystona** and whiting; sandpaper off all rough places on plastering (except sand-finished) before sizing same. Do not coat any wet plaster; permit it to dry first.

SIZE—All plastered walls and ceilings that have not received a coat of oil paint before, and all cracks and patched spots which have not been sized, shall receive a coat of a mixture of one gallon of **Keystona** (the color of the finish) to three quarts of **Keystona** Preparatory Liquid.

BURNED SPOTS—After the size coat has stood for 24 hours there may appear light spots caused by the action of hot lime burning through. Go over all such spots with another coat of the same size, to which a small amount of turpentine has been added. Do not use shellac, varnish or glue. Let touched-up spots dry hard.

KEYSTONA FLAT FINISH—After size coat and touched-up spots have become dry and hard, all plastered surfaces shall receive two coats of **Keystona**, tinted to the colors selected by the architect or owner.

Permit the first coat of **Keystona** to dry for 24 hours, at least, before applying the last coat of **Keystona**.

The above specifications are suitable for both sand and smooth-finish plastering.

MATERIAL REQUIRED—One gallon of the priming coat will cover an average of 1000 square feet. One gallon of **Keystona** second coat will cover an average of 600 square feet, and a third coat will also cover the same amount. One painter will cover more surface with this material than with lead and

PRICES, COLORS—**Keystona** is sold in various-size cans and prepared ready for use in white and tints. The white, when used on interior woodwork, makes a most satisfactory color for hospital buildings, always clean and sanitary, washable, yet preserving its natural color. It can be used the same as white lead in paint by tinting it with ordinary colors in oil, and is preferable to it because white lead costs more and covers less than **Keystona**.

Prices: white, \$2.00 per gallon;
colors, \$2.00 per gallon.

WHERE USED—**Keystona** is specified by the most prominent architects all over the country; it is used extensively on walls, ceilings and interior woodwork of offices and public buildings, hospitals, public institutions, colleges, department stores, apartment houses, hotels, railroad terminals, etc.

TRADE MARK—At the top of this page is placed a facsimile of our Trade-Mark by which the genuine **Keystona** can be identified. Accept no substitute. **Keystona** is a special product and the only one of its kind on the market.

FOR SALE—**Keystona** is for sale, and highly endorsed, by both large jobbers and small dealers in the Painting Supply Business throughout the States.

We always keep a large stock on hand and make immediate shipment, thus avoiding delay in work under way.

TO ARCHITECTS—We have endeavored to explain the full value of **Keystona** as a washable flat finish for walls and ceilings, but would, in addition, solicit the favor of giving you a free demonstration to convince you of its merits. We are always ready to give full information regarding the manufacture and composition of this wall coating.

TO OWNERS—Year after year the calcimine work in your buildings is being repaired or replaced, owing to its rapid deterioration from water and other causes, the surface being absorbent. Why not, instead, use **Keystona** once and save the cost of this frequent recalcimining? The more water and soap are applied to its surface the harder and more beautiful it becomes. Water acts as a benefit to **Keystona**, while it is a detriment to calcimine.

REFERENCES—An extensive list, covering all classes of work, will be given on application.

Hildreth Varnish Company

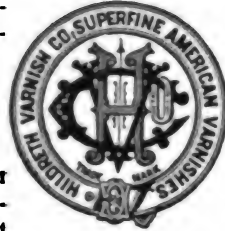
Hildrolite Sanitary Flat Wall Finish for Interior and Exterior Use

THE WEST STREET BUILDING

90 WEST STREET

NEW YORK

PRODUCTS—HILDROLITE, a Flat Oil Finish for Interior Walls; HILDROLITE, an Exterior Finish for Concrete, Brick and Stucco; FINE DECORATIVE VARNISHES



TECHNICAL—The advantage of flat wall finish over wall paper, oil paint and calcimine in an increasing number of situations is now very generally appreciated. It is in such cases no longer a question of what *kind* of material it is best to use, but *what brand* of wall finish shall be selected. In the case of a large building where thousands of feet of surface are to be covered this is a highly important matter.

TEXTURE AND COLOR—The samples of Hildrolite shown in our color card will repay the closest examination. They show exactly how the material appears when applied to the walls, *inside or outside*. Particular attention is called to the texture—the smooth, velvety surface obtained. This is due to the extreme fineness of grinding. The great superiority of Hildrolite in this respect will be seen on comparing these sample strips of Hildrolite with sample strips of other flat finishes.

The finer grinding of Hildrolite not only gives a *smoother* surface, but it gives a *more durable* surface. It insures an absolutely perfect amalgamation with the material of the wall and a better distribution of the finish over its surface.

COLORS—Although we show thirty tints in our color card, assorted for inside and outside use, many others can be produced by blending different shades of Hildrolite. The *beauty* of these colors is of a high order. The richest and most artistic effects may be obtained with Hildrolite in interior decoration or exterior tinting.

DAMPPROOF AND WASHABLE—Hildrolite is impervious to air and moisture. It may be washed with a wet cloth without injury. Its moistureproof feature makes it especially valuable in new buildings where dampness often injuriously affects other wall finishes, causing them to crack or peel off. Finger marks and stains are easily removed from a surface finished with Hildrolite.

DURABLE AND ECONOMICAL—The great durability of Hildrolite makes it most economical. It saves the expense of frequent renewals. The hard airproof and moistureproof surface renders Hildrolite absolutely sanitary. Besides (unlike ordinary cold-water paints) it contains no animal matter to cause decay.

"A.R.C." SYSTEMS

Hildrolite has a good body and superior spreading qualities. Applied with a large flat brush it flows out smoothly and evenly, covering the maximum amount of surface.

APPLICATION—While the directions for applying Hildrolite are easily followed, we recommend that a practical painter be employed to do the work. His experience will insure the most satisfactory and economical results. For the selection of a proper color scheme to harmonize with the interior decorations or to give to the exterior design the happiest effect, it is best to obtain the advice of an architect.

EXTERIOR USES—The extensive use of concrete construction for all classes of buildings and of half-timber work for country residences, with panels of cement finish, have opened up a large field for exterior color work. For all such purposes Hildrolite will give unequalled results in protection against weather and in beauty and permanence of color effect. For manner of applying see the specifications.

TEST—The best proof of the superiority of a flat finish is found in the manner in which it will stand up in actual service. When flat wall finish is considered for important work, we invite the most searching test of Hildrolite by architects, engineers, painters or other interested persons.

SPECIFICATIONS—INTERIOR WORK—All cracks shall be cut out and filled smooth with hard plaster or putty mixed with whiting. All rough places on plastering are to be sandpapered (except on sand-finished walls) before sizing or priming coat is applied. Plastering must be thoroughly dry before applying size. Shellac all knots in the wood.

PRIMING COAT—For best results apply a priming coat, composed of three parts of Hildreth's Wall Primer and one part of Hildrolite of same tint as to be used for the finish coat. Allow 24 hours, or more, for hardening.

FINISHING COAT—Give one good coat of Hildrolite, and allow the work to dry thoroughly. If defects show, due to condition of the plastering, give a second coat.

EXTERIOR WORK—The surface of all exterior concrete or plaster work shall be washed clean and be thoroughly dry. Point all cracks as described for interior work; then apply two or three coats of "Hildrolite," according to circumstances, to obtain a satisfactory finish.

United States Gutta Percha Paint Co.

Manufacturers of Paints and Varnishes

PROVIDENCE, R. I.

PRODUCTS—MANUFACTURERS OF RICE'S PAINT SPECIALTIES: RICE'S MILL WHITE; REINFORCED PAINT; GRANOLITH CONCRETE COATING; GLOSS-O-LITE; FLOW-ON; CHINALINE ENAMEL; STRUCTURAL PAINTS; GUTTA PERCHA PAINTS; SPECIAL PAINTS FOR SPECIAL USES

RICE'S MILL WHITE—INSIDE GLOSS—Rice's Gloss Mill White is the original light-reflecting permanent Paint for mill and factory ceilings and walls. It will not "craze" or crack because the gloss does not depend upon varnish but on a secret process of treating the oil. This insures a durable result and a free-flowing paint. All other gloss paints are of necessity made from varnish.

The glossy surface can be washed and kept clean without injury.

Dust does not adhere to it.

Rice's Mill White has the whiteness of French zinc, more body or opacity than white lead. It produces an enamel gloss and flows as freely as oil paint. Two coats produce a solid white and uniformly glossy finish.

A fair estimate for covering is 400 or 500 square feet to the gallon, each coat, on woodwork. See "Specifications" at foot of this page.

RICE'S MILL WHITE—INSIDE EGG SHELL—Rice's Egg Shell Mill White is like Rice's Gloss Mill White in all respects except whiteness and gloss. It is even whiter than the Gloss Mill White. It does not have the glare or full luster, and by some users it is considered to give a rather more refined and delicate finish. It has just enough "shimmer" or

"surface film" to shed dust and dirt and withstand washing. This is probably the most attractive and satisfactory style of inside painted finish. See "Specifications" at foot of this page.

RICE'S MILL WHITE—INSIDE FLAT—Rice's Flat Mill White gives a dull, or flat finish. It has the intense body of the Gloss and Egg Shell Mill White, but does not have their reflecting power or the dirt-resisting qualities. It is a perfect white. Sometimes used for finishing, but more generally as a priming coat for Rice's Gloss Mill White on work which has been previously painted. It is not used as a primer on new work. See "Specifications" at foot of this page.

RICE'S MILL WHITE PRIMER—Rice's Mill White Primer is used as a priming coat for Rice's Mill White where a total of three coats is specified. It is not sold where only two coats are to be used, for a better finish is obtained in that case by having both coats Rice's Mill White. See "Specifications" at foot of this page.

GRANOLITH—Granolith is a concrete, cement and brick coating. It resists dampness. Sometimes a single coat only is applied. Its largest use is as an under-coat on concrete, cement and brick that are to be finished with one or two coats of Rice's Mill White. See "Specifications" at foot of this page.

SPECIFICATIONS—Engineers and architects desiring the Rice's Mill White Finish can be sure of the best possible results by sending for our complete specifications, of which the following recommendations are a synopsis:

SPECIFICATION FOR THREE-COAT WORK

All Woodwork to receive three coats of paint applied in the order named below:

FIRST COAT—Rice's Mill White Primer

SECOND COAT—Shellac knots or sappy spots showing through the priming coat, then apply coat of Rice's Mill White Flat

THIRD COAT—Rice's Mill White (Gloss or Egg Shell)

All Concrete and Brick Work to receive three coats of paint applied in the order named below:

FIRST COAT—Rice's Granolith

SECOND COAT—Rice's Mill White (Gloss or Egg Shell)

THIRD COAT—Rice's Mill White (Gloss or Egg Shell)

Steel and iron work to be painted, after cleaning, with a coat of Red Lead paint, followed by two coats of Rice's Flat White and a finishing coat of Rice's Mill White (Gloss or Egg Shell).

All the above are to be delivered on the job in the original packages bearing the name of the manufacturers: United States Gutta Percha Paint Company, Providence, R. I.

SALES, PRICES AND SHIPMENTS—All sales direct to users; not sold through dealers. One price to all. Quotations on application.

All shipments are made from the Providence factory. New York deliveries by steamers each night, arriving early the follow-

SPECIFICATION FOR TWO-COAT WORK

All Woodwork to receive two coats of paint applied in the order named below:

FIRST COAT—Rice's Mill White (Gloss or Egg Shell)

SECOND COAT—Rice's Mill White (Gloss or Egg Shell)

All Concrete and Brick Work to receive two coats of paint applied in the order named below:

FIRST COAT—Rice's Granolith

SECOND COAT—Rice's Mill White (Gloss or Egg Shell)

All Paints to be used as received from the manufacturers, except that if any thinning is required a very little pure turpentine may be used.

GENERAL REMARKS

No painting is to be done until windows are all in, and if in the winter time, until the steam is turned on. At all times have room where paint is being applied well ventilated in order to prevent condensation.

Allow as much time as practicable for wood and brick and concrete work to season or dry out thoroughly before applying any paint.

ing morning. Western shipments are by boat to New York and by transfer to all freight lines. Southern shipments by steamers from Providence, three days a week. Orders are usually shipped the day received.

Reference list of large users sent on application.

John Lucas & Co. Paint and Varnish Makers

Since 1849

PHILADELPHIA, NEW YORK, CHICAGO, BOSTON, PITTSBURGH

PRODUCTS—LUCAS TINTED GLOSS PAINT (OUTSIDE PAINT); LUCAS RUSTIC SHINGLE STAINS; LUCAS ABBEY (MISSION) STAINS; LUCAS OIL STAINS; LUCAS ENAMEL; LUCAS CAPITAL WHITE; LUCAS C. P. COLORS IN OIL

LUCAS WRK-WEL ARCHITECTURAL VARNISHES, and a complete line of PAINTS, STAINS, ENAMELS, FILLERS AND VARNISHES specially made for every purpose. Also Manufacturers of LU-CO-FLAT, the perfect flat interior wall Finish

DESCRIPTION OF LU-CO-FLAT—A ready-mixed interior finish that produces a surface which is absolutely flat (without gloss), having all the beauty of water color, but none of the water color's defects. The material covers unusually well—



FOUNDED 1849

two coats as a rule equal three coats of other materials. It does not crack, peel, blister or rub off. Is sanitary and hygienic and not affected by water, steam or moisture. Can be washed. Requires no sizing. Sold in 23 tints and colors, and in White.

AS AN UNDERCOATING—Lu-Co-Flat can also be used as an undercoating for Enamels. As a rule two coats of Lu-Co-Flat followed by one or two coats of Enamel are specified. On all new work the first coat of Lu-Co-Flat is to be thinned

with $\frac{3}{8}$ to $\frac{1}{2}$ gallon of boiled Linseed Oil to the gallon of Lu-Co-Flat; second coat is applied as material comes in can. If two coats of Enamel are to be applied, first coat should be mopped off before applying second.

SPECIFICATIONS FOR INTERIOR WALL FINISHING

Colors to be Selected by the Architect

GENERAL DIRECTIONS

CLEANING—On new plastered or cement walls the contractor shall remove all dirt, grease and foreign substance from the surface.

POINTING—All broken parts of the plaster, cracks, etc., shall be filled up with a putty made of John Lucas & Co.'s Lu-Co-Flat and sufficient whiting to make a stiff paste.

Apply over entire surface with wide brush a solution of sulphate of zinc and water, equal parts by weight. Leave for at least 48 hours, then brush off with stiff brush or whisk broom all loose materials.

No sizing to be used on the walls.

(A) NEW PLASTERED OR CEMENT WALLS, green or damp, where FREE LIME is present on the surface (sand or smooth finish).

Clean down the work, then do all pointing up required. (See General Directions.) When set, apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat as it comes in the can (no reducers or thinners to be added).

(B) NEW PLASTERED (sand or smooth finish) STONE OR BRICK WALLS, green or damp, where NO FREE LIME is present on the surface.

Clean down, and do all pointing up required. (See General Directions.) When set, apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat as it comes in the can (no reducers or thinners to be added).

(C) PLASTERED OR CEMENT WALLS, dry and not previously finished, and where FREE LIME is present on the surface (sand or smooth finish).

Clean down, and do all pointing up required. (See General Directions.) When set, apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat; first coat to be reduced with $\frac{3}{8}$ to $\frac{1}{2}$ gallon (depending on condition of surface) of boiled linseed oil to the gallon of Lu-Co-Flat; succeeding coats to be used as the material comes in the can.

(D) PLASTERED (sand or smooth finish) STONE OR BRICK WALLS, dry and not previously finished, where NO FREE LIME is present on the surface.

Clean down, and do all pointing up required. (See General Directions.) When set, apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat; first coat to be reduced with $\frac{3}{8}$ to $\frac{1}{2}$ gallon (depending on condition of surface) of boiled linseed oil to the gallon of Lu-Co-Flat; succeeding coats to be used as the material comes in can.

(E) PLASTERED CEMENT, STONE OR BRICK WALLS, previously finished.

Wash off thoroughly all coatings on the wall with clear warm water. Then do all pointing up required. (See General Directions.) When set, apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat; first coat only to be reduced with $\frac{3}{8}$ to $\frac{1}{2}$ gallon (depending on condition of

CALCIMINE OR COLD WATER PAINT.

2—If walls have been ENAMELED OR PAINTED WITH OIL PAINT.

(F) METAL CEILING S AND WALLS.

(G) NEW WOOD SURFACES.

(H) OLD WOOD SURFACES, previously enameled or painted with OIL PAINT.

(I) BURLAP, CANVAS OR PAPER - COVERED WALLS.

1—If covering is NOT REMOVED.

2—If covering is TO BE REMOVED.

surface) of boiled linseed oil to the gallon of Lu-Co-Flat; succeeding coats to be used as the material comes in the can.

Remove from walls all portions of the old work which are loose. Entire surface is then to be sandpapered to remove gloss. Then do all pointing up required. (See General Directions.) When set, apply one or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat as it comes in the can (no reducers or thinners to be added).

Examine walls and ceilings carefully, and clean off all dirt, grease and the like, and remove all scale and rust spots with sandpaper. Apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat; first coat to be reduced with $\frac{3}{8}$ gallon of boiled linseed oil to the gallon of Lu-Co-Flat; succeeding coats to be used as the material comes in the can.

Examine entire surface carefully, and clean off all dirt, grease and the like. Shellac all knots and sappy spots. Apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat; first coat only to be reduced with $\frac{3}{8}$ to $\frac{1}{2}$ gallon (depending on condition of surface) of boiled linseed oil to the gallon of Lu-Co-Flat; succeeding coats to be used as the material comes in the can.

Examine all surfaces carefully, sandpapering sufficiently to remove the gloss. Apply one or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat as it comes in the can (no thinners or reducers to be added).

Clean down, and do all pointing up required. (See General Directions.) When set, apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat; first coat to be reduced with $\frac{3}{8}$ to $\frac{1}{2}$ gallon (depending on condition of surface) of boiled linseed oil to the gallon of Lu-Co-Flat; succeeding coats to be used as the material comes in the can.

Remove all material from walls, and do all pointing up required. (See General Directions.) Apply two or more coats, as may be necessary for a perfect finish, of John Lucas & Co.'s Lu-Co-Flat; first coat only to be reduced with $\frac{3}{8}$ to $\frac{1}{2}$ gallon (depending on condition of surface) of boiled linseed oil to the gallon of Lu-Co-Flat; succeeding coats to be used as the material comes in can.

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50		1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
American Safe & Lock Co. Cincinnati, Ohio			21 22 23 24 25			Hart & Cooley Co. New Britain, Conn.	1 10					Miller Store Fixture Co. St. Louis, Mo.	1	11			
Armor-Clad Mfg. Co. Canton, Ohio	2 6 9					Herring-Hall-Marvin Safe Co. New York, N. Y.			21 22 23 24 25 26			Mosler Safe Co. Hamilton, Ohio			21 22 23 24 25 26		
Art Metal Construction Co. Jamestown, N. Y.	1 2 6 9	11 12	23			Jeffries, Richard W. Camden, N. J.	1					Narragansett Machine Co. Pawtucket, R. I.	1				
Berger Mfg. Co. Canton, Ohio	2 6 9	11				Keighley Metal Ceiling Co. Pittsburgh, Pa.	1					Royal Metal Mfg. Co. Chicago, Ill.	1 2 3 4 5 6 7	11 12			
Blake Bank Lock Inspection Co. Worcester, Mass.			24			Keweenaw Mfg. Co. Keweenaw, Wis.	4					Safe Cabinet Co. Cincinnati, Ohio	2		26		
Chicago Time Lock Co. Chicago, Ill.			24			Klemm & Co. Philadelphia, Pa.	8	14				Steel Fixture Mfg. Co. Topeka, Kans.	1 2 6 9	12	23 26		
Clark Co., W. J. Salem, Ohio	1 2 3 4 5 6 7 9	11 12				Lowrie Lock & Safe Mfg. Co. Chicago, Ill.			21 22 23 24 25 26			Toledo Metal Furniture Co. Toledo, Ohio	6				
Corry Metal Furniture Co. New York, N. Y.	1 3 10	12				Lyon Metallic Mfg. Co. Aurora, Ill.	1	11				U. S. Mail Chute Equipment Co. St. Louis, Mo.				33 34	
Darby & Sons Co., Edward, Inc. Philadelphia, Pa.	1 8	11				Manufacturing Equipments & Eng. Co. Boston, Mass.	1	11				Unit Steel Cabinet Co. New York, N. Y.	2 6				
Diebold Safe & Lock Co. Canton, Ohio			21 22 23			Meilink Mfg. Co. Toledo, Ohio			21 22 23 24 25 26			Van Dorn Iron Works Co. Cleveland, Ohio	1 2 9	11 12			
Durand-Steel Locker Co. Chicago, Ill.	1 9	11 12				Merritt & Co. Camden, N. J.	1	11				Victor Safe & Lock Co. Cincinnati, Ohio			21 22 23 24 25 26		
Edwards, O. M. Syracuse, N. Y.	2 6					Metallic Cabinet Co. Indianapolis, Ind.	1					White Steel Sanitary Furni- ture Co. Grand Rapids, Mich.	3 10				
Fireproof Furniture & Con- struction Co. Miamisburg, Ohio	2 6		21 22 23			Meyers Mfg. Co., Fred J. Hamilton, Ohio	1 3 4 6 7 8 9					Wilhelm, H. Brooklyn, N. Y.			33 34		
Gem Mfg. Co. Chelsea, Mass.	1 2 3	11 12	23									Willis Mfg. Co. Galesburg, Ill.			26		
General Fireproof Co. Youngstown, Ohio	1 2 6	11 12	23 26									Wright Wire Co. Worcester, Mass.	1				
												York Safe & Lock Co. York, Pa.			21 22 23 24 25 26		

Hess Warming & Ventilating Company

Manufacturers of

Steel Lockers and Medicine Cabinets, Hot Air Furnaces and Grain Driers

Sales Office
 906G Tacoma Building

CHICAGO, ILL.

General Office and Factory
 1211-1225 South Western Avenue

PRODUCTS—HESS STEEL CLOTHING LOCKERS; STEEL MEDICINE CABINETS; STEEL HOT-AIR FURNACES; GRAIN DRIERS

DESCRIPTION—Hess Steel Clothing Lockers are sanitary, durable, and safe against fire and water. They embody the most improved elements of construction as follows:
FRAMELESS BODIES—The corner and door jambs are formed from the solid side sheets without angle-iron frames or rivets, thus insuring a compact and rigid construction that eliminates all seams and crevices.

CABINET BASES—They prevent dust and dirt under lockers. A quarter-round is used to finish the base to make a tight fit to the floor. Adjustable steel legs are supplied if preferred.

WELDED TUBULAR PAN-ELED DOORS—Every seam welded, not a rivet or bolt in the entire door or in the front of our lockers. Without question the strongest and handsomest steel locker door made.

LOUVER VENTILATION—Ventilates and keeps out dust. Approved by Board of Fire Underwriters as best combination of ventilation and fire protection (see cut).

STOCK LOCKERS—Made of No. 22 gauge, the doors of No. 20 gauge steel; in colors, green and black of the best baked enamel. They are equipped with brass-plated coat and hat hooks, or with hanger rods, louver ventilation, brass number plates, 3-point catches and turn-handles on 60 inch and higher (1-point on smaller sizes), cylinder flat-key locks, padlocks, or combination lock, as required. All parts are interchangeable.

OUR LARGEST CUSTOMER—The United States War Department has purchased over 18,000 of our lockers since August, 1908.

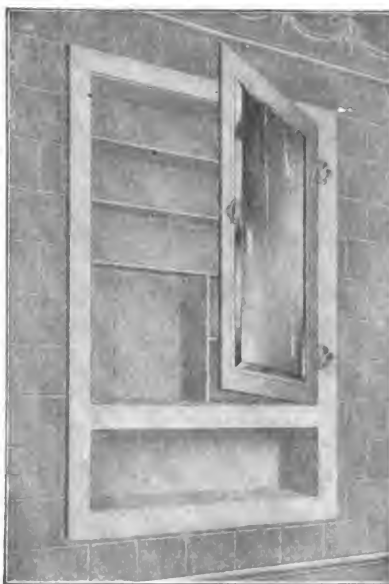
HESS EXPANDED METAL DOORS—These are the most durable open-front doors, as all joints are welded, and bolts or rivets are eliminated. The seamless expanded metal panels and the cross-rails are interlocked into the welded door frame.

STYLE D B shows a Double-Tier steel-body and expanded-metal door locker. This style secures full ventilation for both compartments.

"A.B.C." SYSTEMS



STYLE B
 (Single Tier)



HESS MEDICINE CABINET (STYLE E)
 (Open Shelf below)

Fitted with padlock and 1-point catch and either adjustable steel legs or cabinet base.

REGULAR SIZES OF LOCKERS

On 4-inch Cabinet Bases or 6-inch Legs.

Double Tier, Inches.	Single Tier, Inches.
12 x 12 x 36	12 x 12 x 60
12 x 12 x 42	12 x 12 x 72
12 x 15 x 36	12 x 15 x 60
12 x 15 x 42	12 x 15 x 72
12 x 18 x 36	12 x 18 x 60
12 x 18 x 42	12 x 18 x 72
15 x 15 x 36	15 x 15 x 60
15 x 15 x 42	15 x 15 x 72
15 x 18 x 36	15 x 18 x 60
15 x 18 x 42	15 x 18 x 72
18 x 18 x 36	18 x 18 x 60
18 x 18 x 42	18 x 18 x 72

The height of bases or legs is to be added to the height of Lockers.
 Send for full illustrated catalog.
 Sample lockers sent for examination, without charge.

HESS STEEL MEDICINE CABINETS—Are a sanitary, durable and high-grade product. Enameled throughout with the finest white baked enamel, or front can be finished in imitation wood. Equipped with bevel or plain imported plate-glass mirrors, or with solid doors or clear plate-glass panels.



STYLE D B
 (Double Tier)

DETAILS—Hardware is of solid bronze, nickel-plated. Lockers are made in two styles and in four sizes (see table). Framed openings should be prepared 6 feet 2 inches from floor to top of opening for recessed lockers. Recess to be 4 1/4 inches deep, and closets project 1 1/4 inches beyond face of plastering. Use 3/4-inch grounds. The cabinet is complete; four screws to insert, and no other labor of installing.

We ship everywhere and replace free any goods damaged in transit.

The prices are net, f. o. b. Chicago. When ordered by contractors or architects 5 per cent. discount is allowed, or 10 per cent. if twenty or more cabinets are taken in one shipment.

PRICES (F. O. B. CHICAGO) AND SIZES

No.	Extreme Outside Dimensions, Inches	Inside Dimensions, Inches	Framed Opening Required 4 1/4 in. Deep	PRICES		
				With Enamel- ed Shelves	With Polished Plate Glass Shelves, Add	Plain Door No Mirror, Deduct
STYLE E: To recess in wall, open shelf below						
20	21 1/2 x 33 1/2	18 3/4 x 21	19 x 30	\$10.00	\$2.50	\$2.00
21	23 1/2 x 35 1/2	20 3/4 x 23	21 x 32	12.00	2.75	2.50
22	25 1/2 x 37 1/2	22 3/4 x 25	23 x 34	14.00	3.00	3.00
23	27 1/2 x 39 1/2	24 3/4 x 27	25 x 36	16.00	3.50	3.50
STYLE F: To recess, without open shelf below						
30	21 1/2 x 25 1/2	18 3/4 x 21	19 x 22	\$8.00	\$2.50	\$2.00
31	23 1/2 x 27 1/2	20 3/4 x 23	21 x 24	10.00	2.75	2.50
32	25 1/2 x 29 1/2	22 3/4 x 25	23 x 26	12.00	3.00	3.00
33	27 1/2 x 31 1/2	24 3/4 x 27	25 x 28	14.00	3.50	3.50
STYLE G: To screw to face of wall, open shelf below						
40	21 1/2 x 32	20 1/2 x 23	....	\$8.50	\$2.75	\$2.00
41	23 1/2 x 34	22 1/2 x 25	....	10.50	3.00	2.50
STYLE H: To screw to face of wall, without open shelf below						
50	21 1/2 x 24 1/2	20 1/2 x 23	....	\$7.00	\$2.75	\$2.00
51	23 1/2 x 26 1/2	22 1/2 x 25	....	9.00	3.00	2.50

Left-Hand Lockers \$0.50 extra. Lock and Key \$0.50 extra.
 Send for full catalog illustrating the four styles.

Federal Steel Fixture Company

Manufacturers of
Steel Lockers and Cabinets

4545 W. HOMER STREET
CHICAGO, ILL.

PRODUCTS—STEEL CLOTHES LOCKERS;
OFFICE CABINETS; FILING DEVICES; AD-
JUSTABLE AND PLAIN SHELVING

DESCRIPTION—Federal Steel Lockers combine quality, strength and utility, a simple construction, a thoroughly standardized unit system. Each locker is completely reinforced with angle-steel frames and has a reinforced overlapping door. We use stretcher-leveled furniture steel and a two-coat baked-enamel finish. The adjustable leg, each made to do its duty, permits of a wider spacing, a detail that will be appreciated by the Caretaker.

STANDARD TYPE—A sheet steel door of No. 16 U. S. gauge having a reinforcing panel of $\frac{3}{4}$ " x $\frac{3}{4}$ " x $\frac{1}{8}$ " angle steel; an embossed, hooded perforation which strengthens the door and acts as a dust shield, while yet providing a free and sufficient circulation of air.

FINISH—Our standard finish is black enamel, two coats, baked at a temperature of 400 degrees Fahrenheit. This is unquestionably the best protection against rust and deterioration that can be applied to steel.

We also furnish olive-green baked-enamel finish at regular prices, and can supply special colors such as white, maroon, aluminum and special wood graining at an increased cost.

Our steel is all thoroughly cleaned and prepared by a special process before receiving the baked-enamel covering.

WELDED ANGLE-STEEL FRAME—All doors are hung in mitered and

"A.B.C." SYSTEMS



STANDARD TYPE
(Single Tier)

oxy-acetylene welded frames which are actually one piece of steel, insuring absolute rigidity and free operating doors.

EXPANDED-METAL TYPE—In this type of locker, we recommend that the door only be of expanded metal. We can, however, furnish other parts made of this material if it is specified. We use No. 13 gauge $\frac{3}{4}$ " x $1\frac{1}{4}$ " diamond mesh expanded metal.

ADJUSTABLE SHELVING—The illustration below shows a row of lockers, adjustable shelving and rolling ladder installed by us for Sprague, Warner & Company, Wholesale Grocers, Chicago. Note the economy in space.

SIZES—Federal Lockers are made in the following stock sizes on 6-inch adjustable legs:



EXPANDED-METAL TYPE
(Single Tier)

SIZES FEDERAL LOCKERS

WIDE	DEEP	HIGH
12 inches x 12 inches		DOUBLE TIER
12 inches x 15 inches		
12 inches x 18 inches		
15 inches x 12 inches		x 36 inches
15 inches x 15 inches		
15 inches x 18 inches		
18 inches x 12 inches		SINGLE TIER
18 inches x 15 inches		
18 inches x 18 inches		
		x 48 inches
		x 60 inches
		x 72 inches



FEDERAL LOCKERS AND ADJUSTABLE SHELVING

CONSTRUCTION DETAILS—Our standard door is of No. 16 United States gauge steel with reinforcing panel of $\frac{3}{4}$ x $\frac{3}{4}$ x $\frac{1}{8}$ inch angle steel. The expanded-metal door is of No. 13 gauge $\frac{3}{4}$ x $1\frac{1}{4}$ inch diamond mesh framed in oxy-acetylene welded frames of $\frac{3}{4}$ x $\frac{3}{4}$ x $\frac{1}{8}$ inch angle steel, with reinforcing center strip of No. 20 gauge steel. The box of the locker is of No. 20 gauge steel with a 1 x 1 x $\frac{1}{8}$ inch angle front frame and a $\frac{3}{4}$ x $\frac{3}{4}$ x $\frac{1}{8}$ inch back frame. We use no rivets; assembling done by the electric spot-weld process.

PRICES—We should know the size, arrangement and number of lockers to be installed to enable us to quote close figures.

Terrell's Equipment Company

Manufacturers of

Metal Lockers and Steel Equipment

HALL AND HILTON STREETS
GRAND RAPIDS, MICH.

PRODUCTS — STEEL LOCKERS, WARDROBES, AND CUPBOARDS. STEEL SHELVING AND RACKS.

STANDARD EQUIPMENT—HAT SHELF—Each locker 60 inches or 72 inches high is fitted with a shelf 9 inches from top.

LOCKS—The following types of Locks can be furnished:

1. Masterkeyed Flat Key Locks.
2. Combination Keyless Locks.
3. Masterkeyed Padlock or Padlock Attachment without Locks.

All doors are fitted with a three-way locking device. This device is operated by the door handle from the outside of the Locker. The door handle and center latch are made of malleable iron.

Hooks—Each locker is fitted with three two-prong hooks, enameled.

NUMBER PLATES—These are made of brass with etched figures arranged in serial numbers.

HINGES—Tight Pin wrought steel 2 inches by 2 1-16 inches with extra heavy Pin.

FINISH—Baked Enamel: Black, Olive, Green or Maroon. Black is by far the best finish as it is baked on at a much higher temperature than any other color can stand, thus insuring a tougher and more durable finish.

ERECTION—We furnish very complete instructions for the erection of Lockers so that parties desiring to attend to this can do the work without difficulty.

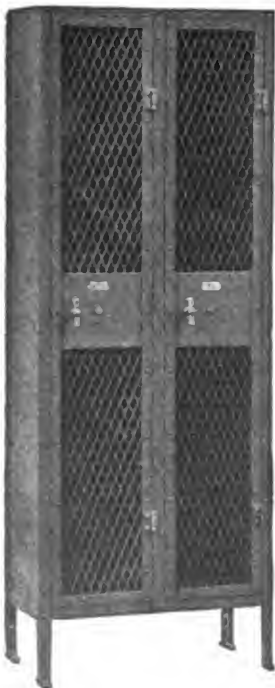
If the installation comprises a considerable quantity of Lockers we can undertake the erection at a very moderate cost with our force of trained assemblers.



TYPE A-L
SINGLE TIER



TYPE B-L
DOUBLE TIER



TYPE E-3
SINGLE TIER



TYPE F-3
DOUBLE TIER



TYPE H-H
DOUBLE TIER



TYPE G-G
SINGLE TIER

"A.B.C." SYSTEMS

Continued on next page

STANDARD SIZES OF LOCKERS

Each compartment is always figured as one Locker

SINGLE TIER			DOUBLE TIER		
Width	Depth	Height	Width	Depth	Height
12"	12"	60" or 72"	12"	12"	36" or 42"
12"	15"	60" or 72"	12"	15"	36" or 42"
12"	18"	60" or 72"	12"	18"	36" or 42"
15"	15"	60" or 72"	15"	15"	36" or 42"
15"	18"	60" or 72"	15"	18"	36" or 42"
18"	18"	60" or 72"	18"	18"	36" or 42"
18"	24"	60" or 72"	No Hat Shelf in Double Tier Lockers		

NOTE.—The height of Lockers is listed exclusive of Legs. The standard height of legs is 6 inches; this should be added to get the over all height. Each leg is fitted with a malleable iron attachment at the bottom which is adjusted with a machine bolt so that the Lockers can be easily leveled.

MATERIAL SPECIFICATIONS OF LOCKERS—BODIES—Frames, 1-in. by 1-in. by $\frac{1}{8}$ -in. special steel angle with a smooth surface. Panels, 24-gauge steel.

DOORS—All frames, 1-in. by 1-in. by $\frac{1}{8}$ -in. special steel angle with a smooth surface.

Types H-H and G-G have a center plate of 16-gauge steel with top and bottom panels of 22-gauge steel.

Types A-L and B-L have pressed door panels of 16-gauge steel.

Types E-3 and F-3 have a center plate of 16-gauge steel and top and bottom panels of $\frac{3}{4}$ -inch diamond mesh 15-gauge expanded metal.

NOTE—All steel used is full 3-pass C R, roller leveled and pickled.

STEEL WARDROBES, TYPE C-T, EQUIPMENT—

LOCKS—1. Masterkeyed Flat Key Locks. 2. Combination Keyless Locks. 3. Masterkeyed Padlock or Padlock Attachment without Locks.

All doors fitted with a three-way locking device.

HAT SHELF—Nine inches from top. Rod for Hangers below Hat Shelf.

HOOKS—Five two-prong steel hooks, enameled.

FINISH—Baked Enamel: Black, Olive, Green or Maroon.

STANDARD SIZES OF WARDROBES

Width	Depth	Height	Base Height	Overall Height
30"	24"	72"	54"	77 $\frac{1}{2}$ "
36"	24"	72"	54"	77 $\frac{1}{2}$ "



INSTALLATION OF STEEL SHELVING

"A.B.C." SYSTEMS

STEEL CUPBOARD, TYPE O-T—Fitted with shelves inside. Quantity of Shelves arranged to suit requirements. Locks and Finish same as Wardrobe C-T.

STANDARD SIZES OF CUPBOARDS

Width	Depth	Height
30"	15"	60" or 72"
30"	18"	60" or 72"
30"	24"	60" or 72"
36"	15"	60" or 72"
36"	18"	60" or 72"
36"	24"	60" or 72"



TYPE C-T
METAL WARDROBE

MATERIAL SPECIFICATIONS—For Steel Wardrobes and Steel Cupboards—

Frames of bodies and doors, 1-in. x 1-in. x $\frac{1}{8}$ -in. steel angle with smooth surface.

Panels of bodies, 20-gauge steel, U. S. S.

Panels of doors, 16-gauge steel, U. S. S.

All Steel 3-pass C R, roller leveled and pickled.

Ventilation—Doors can be provided with Louvre vents or round perforations if desired.

STEEL SHELVING—Shelf Adjustment three inches from center to center.

Vertical Compartment Dividers furnished to subdivide the Length of Shelves.

All standard Shelves punched for three Dividers, placed equal distances.

Bin Strips five inches high can be furnished for any of these Shelf Fronts.

Standard Finish—Baked Enamel: Black, Olive, Green or Maroon.

STANDARD SIZES OF END AND CENTER UPRIGHTS

Width	Lengths
12"	x 3', 4', 5', 6', 7', 8', 9' or 10'
18"	x 3', 4', 5', 6', 7', 8', 9' or 10'
24"	x 3', 4', 5', 6', 7', 8', 9' or 10'

Intermediate Heights furnished when desired.

STANDARD SIZES OF SHELVES

12" x 24"	18" x 24"	24" x 24"
12" x 30"	18" x 30"	24" x 30"
12" x 36"	18" x 36"	24" x 36"

MATERIAL SPECIFICATIONS—End Uprights—18 Gauge U. S. S. steel reinforced with two strips 1-in. x 1-in. x $\frac{1}{8}$ -in. steel angle.

Center Uprights—18 Gauge U. S. S. Steel, reinforced by four strips of 1-in. x 1-in. x $\frac{1}{8}$ -in. steel angle.

Backs—18 Gauge U. S. S. steel.

Shelves—16 Gauge U. S. S. steel, strongly reinforced.

Carrying Capacity exceeds 2500 pounds per shelf.

CATALOG—Write for Catalog No. 5 showing details of construction together with illustrations of the various parts, and List Prices.

Frank H. Graf Mfg. Co.

Metal Medicine Cabinets

Importers and Manufacturers of Fireplace Appliances

Factory and Warerooms
322 SEVENTH AVENUE, CORNER 28th STREET
NEW YORK, N. Y.

PRODUCTS—METAL MEDICINE CABINETS. We also import and manufacture the following fireplace appliances: ANDIRONS, FRAMES, FENDERS, FIRE TOOLS, SCREENS, SEAT FENDERS, etc., in Brass, Bronze or Wrought Iron in a wide variety of styles and periods; SMOKELESS GAS LOGS

METAL MEDICINE CABINETS—The general demand for sanitary conveniences in residences and apartments of to-day has made it advisable to install only the best appliances that can be obtained. Among the smaller devices to which special attention has been paid, the medicine cabinet is one of the most important. Except in work of the cheaper grade, the use of wood in bathroom appliances has been abandoned in favor of materials that are not only in themselves more sanitary but which lend themselves to more sanitary methods of construction. Next to the abolition of boxed-in plumbing fixtures the introduction of metal medicine cabinets is, perhaps, the greatest sanitary improvement in the modern bathroom.

CONSTRUCTION—Back—Heavy cast-iron, white porcelain-enameled.

Door and Frame—Brass, nickel-plated or white-metal (German silver).

Shelves—Two, of $\frac{1}{4}$ -inch plate glass, furnished with each cabinet. Extra shelves at small additional charge.

Shelf Supports—Adjustable sliding supports equipped with set screws, permitting adjustment at any point.

Mirror—Beveled French plate, lock and key.

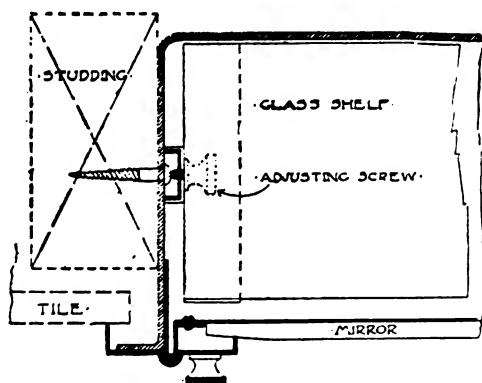
Joints—Closely fitted, corners rounded, making cleaning easy.

Note—The use of white metal for frame, door, slides and shelf supports is recommended. This metal retains its silver-white appearance indefinitely and is easily cleaned.

INSTALLATION—As our cabinet may be set without damage to finished work with which it comes in contact, all general work should be finished completely before installing the cabinet. That requires about one hour's time to do.

SHOW ROOMS —Completed cabinets may be seen at our own show rooms.

MATERIALS AND FINISH—In addition to the nickel-plated brass and German Silver Cabinets as described above, we make them in our **Special White Enamel Finish** on steel body, guaranteed to be durable and unchanging in color.

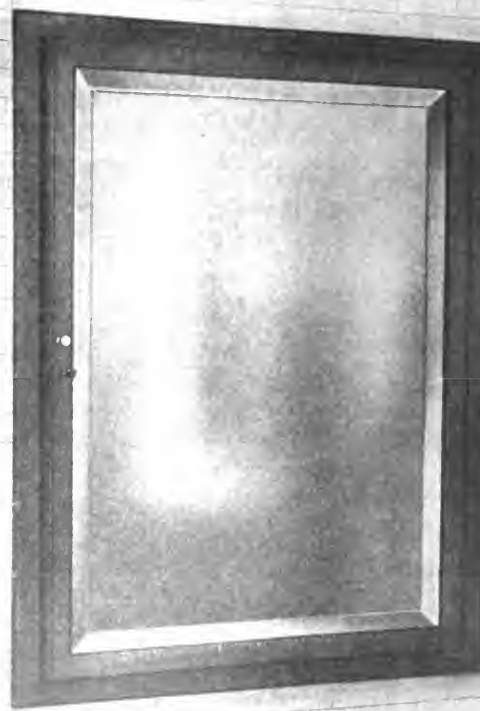


SECTIONAL PLAN SHOWING CONSTRUCTION

Catalogs and Prices sent on application



CABINET OPEN
Showing Adjustable Shelf Supporters and Slides



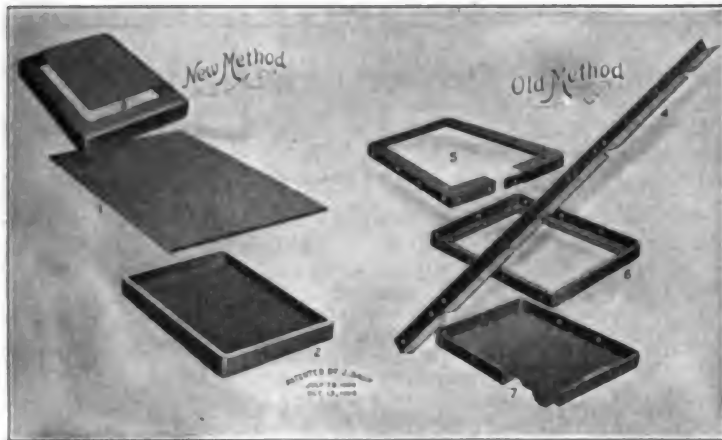
FRONT VIEW WITH MIRROR

J. Baum Safe & Lock Co.

613 TO 625 EAST FRONT STREET
CINCINNATI, OHIO

PRODUCTS—"Tisco" MANGANESE SAFES; STANDARD AND SPECIAL SAFETY VAULTS PATENTED COMBINATION, AUTOMATIC AND TIME-LOCKING DEVICES FOR SAFE AND VAULT DOORS;
HOUSEHOLD SAFES; COMBINATION LOCKS AND FLAT KEY LOCKS

NEW PATENTED METHOD IN OUR FIREPROOF LINE—The illustration below shows our new flanged construction. It enables us to use much heavier material for the back and door plate than other concerns. We are the first to manufacture a square flange on plates heavier than $\frac{1}{4}$ inch thick.



EXPLODED VIEWS OF NEW AND OLD METHODS

DETAILS OF CONSTRUCTION—The above cut of the old and new methods shows at a glance the superiority of our new style.

No. 1 of the new method is a plate made of No. 165 gauge iron steel and larger, which is flanged into a solid form, as per No. 2. This makes the back of the safe. No. 3 is the same piece, but it shows the door died out, and the mark in the center shows how the door plate can be cut in half for small and large double-door sizes.

By making the safe in this manner of one piece, it does away with the mitered corners; it does away with riveting the back, as shown in No. 7 in the old method. It eliminates using angle iron bars mitered out at all corners like No. 4, bent into a frame as per Nos. 5 and 6. It does away with drilling holes to rivet the back as per No. 7, also the front miters. It obviates using a lapped bar to connect the frame as per No. 5, also the mitered joint at all four corners as seen in No. 5.

Should any of the corners be melted off in the old method, the safe will fall apart; but on the new style, if the corner were melted off or any other part of the safe, the flanges will hold the body of the safe together. There is no part to let go, as it is all one solid piece; therefore the entire part would have to melt off before the safe would lose any of its strength.

"TISCO" MANGANESE SAFES—The Manganese Steel used in the entire construction of these Safes is guaranteed Non-magnetic, Burglar's-Drillproof and Nitroglycerinproof. Locking Jams on both body and door are solidly cast all in one part, and have no bolts or any parts bolted or nutted together in their entire construction.

Both the door and the body opening have ground surfaces, so that the joints can hardly be distinguished when the door is closed. It is impossible to use any explosive effectively or get liquid between these joints.

All "Tisco" Manganese Steel Safes are securely locked with automatic and time lock, or fitted with combination lock and time lock. We can place a combination lock for day use on the carry-ing crane.

"A.B.C." SYSTEMS

STANDARD "TISCO" MANGANESE SAFE NO. 2

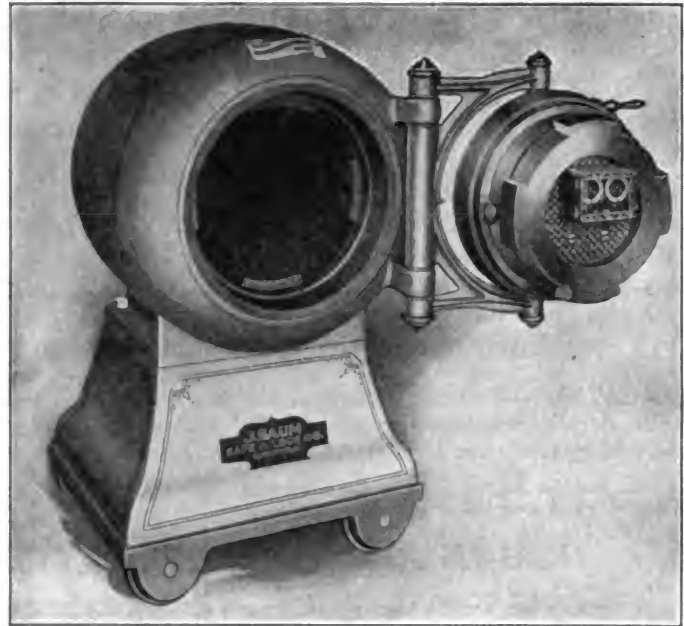


TABLE OF SIZES OF "TISCO" MANGANESE SAFES

Safe No.	Outside				Inside			Clearance Bolt	Clearance Opening	Thickness, Door	Thickness, Body	Back Radius	Side Radius	Corner Radius	Clearance Swing, deep	Clearance Swing, wide	No. Lock Jaws	Weight	Capacity Cubical Feet	Base Stand, Weight
	Height	Width	Depth	Overall Depth	Height	Width	Depth													
2	24	24	24	27	18 1/2	18 1/2	14 1/2	12	13	7	2 1/2	30	34	6	43	38 1/2	4	1800	2	200
3	28	28	28	31	22	22	17	14	15	8	3	36	36	8	50 1/2	46	6	2550	2 1/2	225
5	31	31	31	34	25	25	20	16	17	8	3 1/2	36	36	8	55 1/2	50 1/2	6	3200	3	300
7	35	35	35	37	29	29	23	18	19	8	4	38	38	10	60	55 1/2	6	3950	7	350
10	40	40	40	43	34	34	23	24	25	8	4 1/2	40	40	12	66 1/2	67 1/2	8	5000	10	400
15	48	48	48	51	42	42	23	30	31	8	5	48	48	12	73	80	10	7250	15	500

FIREPROOF VAULTS AND GOVERNMENT VAULTS—

These doors are hung on three strong hinges and fitted with batten bars made of $2\frac{1}{2} \times \frac{3}{8}$ bar steel and riveted around the entire edge, making the doors $\frac{5}{8}$ thick. To these bars are fitted a $2\frac{1}{4} \times 1\frac{1}{4}$ cold-rolled steel bar. The bars are fitted with 1" cold-rolled round steel bolts, four across and one up and down, also made double-acting, and securely locked with combination lock. Inner door made in two folds, batten-barred and fitted with flat up-and-down bolts and locked with flat key lock. Rear flanges can be unscrewed and vault placed in position and leveled. To complete setting, it is but necessary to fill up all crevices after leveling and place back flanges, and vault is ready for use.



GOVERNMENT VAULT

Made as per specifications, any size. Standard size, clear opening, 28x74, to fit an 18" Wall. Clear opening in Wall to receive Vault, 32x77.

CLASSIFICATION PAGE OF
SECTION 41

Fireplace Mantels and Equipment

(Architectural Faience Mantels see also Section 8)

(Stone and Marble Mantels, natural and artificial, see also Sections 9 and 10)

(Marbleized Slate Mantels see also Section 27B)

(Wood Mantels see also Section 21)

Section Synopsis

MANTELS, all materials and designs; Coal Grates, Ventilating Grates, Coal and Wood Baskets, Fenders; Andirons, Tools; Metal Fire Screens; Asbestos Gas Curtains; Gas Logs; Gas and Electric Reflector Grates; Combination Steam Grates

Baltimore Fireplace Heaters; Patent Iron Throats and Dampers; Smoke Curtains, etc.; Facings and Hearths of Tiling, Marble, etc.; Bronze and Cast-iron Fireplace Linings

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX REGULAR CLASSIFICATION		Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers					SPECIAL REFER- ENCE LIST of Catalog Firms making some Products of this Section but whose Catalogs are placed elsewhere according to their gen- eral line of business.
				1 to 10	11 to 20	21 to 30	31 to 40	41 to 50	
1	Asbestos gas curtains								
2	Baltimore fireplace heaters								
3	Facings of tiling, marble, art metal, brick, slate, etc.								
4	Fenders, andirons, tools, coal and wood baskets, etc.	3	Colonial Fireplace Co. Chicago, Ill	1 3 4 5 7 8	11 20 22	21 22		41 42	American Encaustic Tiling Co. S. 24 A, Cat. 3 (Tiles for hearths and facings)
5	Fire or spark screens:—								
6	Portable								
7	Sliding								
8	Fireplace linings, bronze, cast-iron								
9	Grates:—								
10	Coal fire								
11	Combination steam	1	Covert Co., The H. W. New York, N. Y.		20			41 42 43	Ariston Marble Co. S. 9, Cat. 3 (Fireplace mantels and facings)
12	Gas and electric reflector								
13	Gas logs								
14	Ventilating and warm-air heat- ing								
15	Hearths of tiling, marble, mosaic, etc.								
16	Mantels:—								
17	Art metal								
18	Brick								
19	Faience								
20	Marble, stone								
21	Slate	2	Jackson & Bro., E. A. New York, N. Y.	1 2 3 4 5 7 8	11 12 13 17 18 19			41 42	Graf Mfg. Co., Frank H. S. 40 A, Cat. 4 (Grates, fenders, and irons, etc.)
22	Wood								
	Patent iron throats and dampers								
	Smoke curtains								
	Smoke chambers								
SPECIAL CLASSIFICATION									
Covers products belonging to other sec- tions. Included in this section because not sufficiently extensive for separate cata- loging in the section to which they belong.									
41	Ash flue and soot doors (S. 18)								
42	Coal chutes (S. 16 E)								
43	Iron plinths, porch columns (S. 18)								
TRADE NAMES AND BRANDS									
"Ariston," treated marble altar fonts, etc., S. 9, Catalog 3.									
									Paine Lumber Co. S. 21 B, Cat. 3 (Wood mantels and consoles)
									Pitt Composite Iron Works, Wm. R. S. 15 A, Cat. 8 (Andirons, fire sets, wood holders)
									Trent Tile Company S. 24, Cat. 1 (Tiles for hearths and facings)

Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
Adams Bros. Mfg. Co..... Pittsburgh, Pa.	8 10	11 12 14 16 17 19			
American Foundry & Mfg. Co. St. Louis, Mo.	7				
Arnold Damper Selling Co New York, N. Y.		20			
Boston Brass Andiron Co. Boston, Mass.	4				
Bradley & Hubbard Mfg Co New York, N. Y.	4				
Central Mantel Co..... St. Louis, Mo.	3 8 10	11 13 19			43
Chattanooga Implement & Mfg Co Chattanooga, Tenn.	4 7 8				
Collins & Thompson... New York, N. Y.	5 6				
Dawson Bros..... Chicago, Ill.	3 4 8	11 19			
Hoop & Co., Wm. H..... Chicago, Ill	4	19			
Jackson Co., Wm. H..... New York, N. Y.	4				
King Mantel Co..... Knoxville, Tenn.	3 4	19			
Kramer Bros Foundry Co.. Dayton, Ohio	8 9				
Manhattan Brass Co..... New York, N. Y.	3 4				43
Peck, Stow & Wilcox Co.. New York, N. Y.	4				
Peerless Mfg. Co..... Louisville, Ky.	4 5 7 8 9	20			
Rathbone Fireplace Mfg. Co Grand Rapids, Mich.	4 5 7 8 9 10	12 20			
Stover Mfg. Co..... Freeport, Ill.	4				
Superior Mfg. Co..... N. S. Pittsburgh, Pa.	4 8	11			
Pishech Co., David Baltimore, Md.	10	17			

The H. W. Covert Company

Manufacturers of Fireplace Specialties

168 DUANE STREET
 NEW YORK, N. Y.

AGENTS IN THE PRINCIPAL CITIES OF THE UNITED STATES

PRODUCTS.—"COVERT" PATENT IRON FIREPLACE THROAT AND DAMPER; "COVERT" REINFORCED CEMENT SMOKE CHAMBER; CLEANOUT DOORS; ASH DUMPS; IRON PLINTHS FOR PORCH COLUMNS, ETC.

DESCRIPTION.—The "Covert" Throat and Damper meets the demand for an iron fireplace throat designed on scientifically accurate lines. It takes the place of the varied forms of masonry throats and eliminates the danger of faulty construction.

In addition to the above advantages, the "Covert" Throat and Damper presents smooth surfaces to lead the gases into the smoke chamber, it affords protection to the woodwork of the mantel, and it forms a strong lintel to support the masonry of the chimney above. Its cost is so small an item that the saving of the time of the brick mason will in most cases fully offset it.

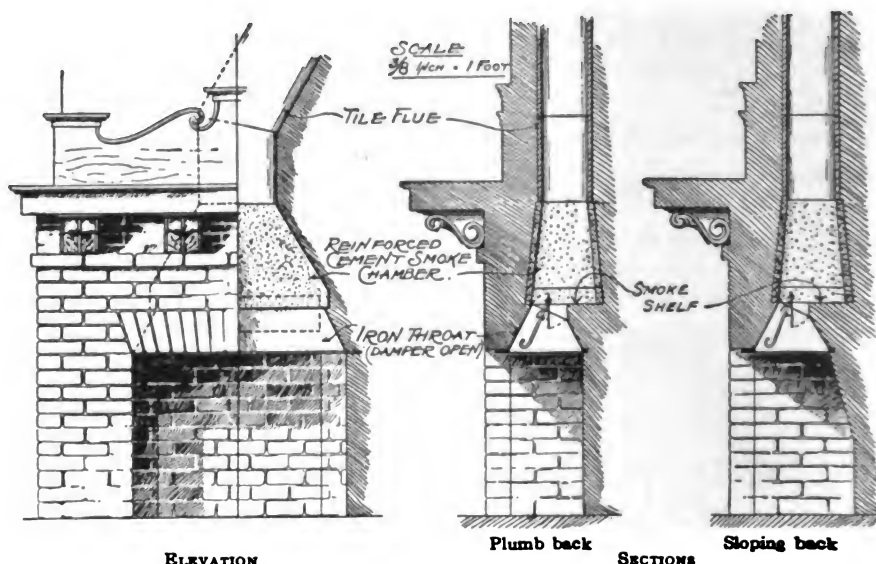
The "Covert" Reinforced Cement Smoke Chamber completes the connection between the iron throat and the tile flue, assuring the proper size and proportion, and affording a smoother surface than is possible in brickwork. The walls are about $1\frac{1}{8}$ " thick, made of a strong mixture of Portland cement and sand, reinforced with wire mesh.

HOW TO SPECIFY.—Each fireplace to be covered with a "Covert" Patent Iron Throat and Damper of proper size (made by The H. W. Covert Co., 168 Duane Street, New York, N. Y.), built in when the chimney is constructed, same serving as an arch bar. Connection from Throat to flue is to be made with a "Covert" Reinforced Cement Smoke Chamber.

REFERENCES.—The following is a partial list of the architects who specify our products for fireplace construction:

McKim, Mead & White
 Clinton & Russell
 Warren & Wetmore
 Carrère & Hastings
 Grosvenor Atterbury
 John Russell Pope
 Rutan & Russell
 Bragdon & Hillman
 Kirby, Petit & Green
 George Martin Huss
 Beatty & Stone
 George A. Freeman
 F. G. Hasselman
 Walter Leslie Walker

Wilson Brothers & Co.
 Cope & Stewardson
 Frank Miles Day & Bro.
 Charles Barton Keen
 Wilson Eyre
 Stearns & Castor
 Arthur C. Clausen
 William Warren Sabin
 Delano & Aldrich
 Davis, McGrath & Kiessling
 John Cox, Jr.
 Jackson & Rosencrans
 Radcliffe & Kelly
 A. E. Barlow



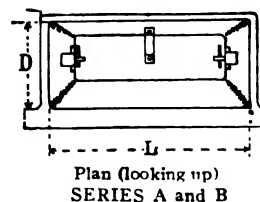
SHOWING PROPER FIREPLACE CONSTRUCTION

PRICE LIST

THROAT AND DAMPER

SMOKE CHAMBER

Damper Number	Width of Fire-place	Code Word	Length L-ins.	Depth D-ins.	Weight Lbs.	Price	Code Word	Size Flue Ins.	Price
Series A	224 2 ft 0 in	Allen	24	12	26	\$3.75	Seam	8x8	\$2.50
	230 2 ft 6 in	Abet	30	12	36	4.25	Sutro	8x8	4.00
	232 2 ft 8 in	Altar	32	12	40	4.50	Sleep	8x8	4.50
	236 3 ft 0 in	Agent	36	12	46	4.75	Suter	8x12	4.50
	242 3 ft 6 in	Anvil	42	12	56	5.50	Supine	8x12	5.00
	248 4 ft 0 in	Agate	48	12	66	6.50	Saline	12x12	6.00
Series B	36 1/2 3 ft 0 in	Bark	36	16	85	6.75	Sear	8x12	4.50
	42 1/2 3 ft 6 in	Brake	42	16	93	7.25	Soak	8x12	5.00
	48 1/2 4 ft 0 in	Blank	48	16	105	8.50	Seed	12x12	6.00
	54 1/2 4 ft 6 in	Band	54	16	120	9.25	Soar	12x12	7.50
	60 1/2 5 ft 0 in	Bold	60	16	130	10.00	Sail	12x16	9.00
	72 1/2 6 ft 0 in	Bind	72	16	176	15.00		12x24	not made
Series C	84 1/2 7 ft 0 in	Brand	84	16	210	20.00		12x30	not made
	30 2 ft 6 in	Claim	30	10	36	4.25	Spume	8x8	4.00
	36 3 ft 0 in	Cloth	36	10	46	4.75	Spear	8x12	4.50
	42 3 ft 6 in	Cadet	42	10	56	5.50	Speak	8x12	5.00
	48 4 ft 0 in	Clump	48	10	66	6.50	Spade	12x12	6.00



Plan (looking up)
 SERIES A and B



Plan (looking up)
 SERIES C

For our new improved damper see next page

THE COVERT IMPROVED FIREPLACE THROAT AND DAMPER
(Patent applied for)

DESIGN—This damper is designed on new lines evolved from a long and thorough study of the fireplace problem. Experimental work conducted by us has convinced us that the **form of fireplace** shown by the accompanying illustration is the best that can be designed.

The high reputation of our firm stands behind this new damper; and we are satisfied that for *strength, simplicity, perfect control and fine lines* it meets every requirement.

Note the following points:

THE CURVED FRONT—The curved front of this iron throat (substantially the line recommended by Count Rumford) is the line that the in-rushing air entering under the arch follows most easily, carrying with it into the smoke chamber any smoke that might have a tendency to work out into the room.



PHOTOGRAPH OF NEW DAMPER

THE VALVE PLATE—This plate, fitting loosely at the bottom and back of the throat and continuing the sloping line of the back of the fireplace, brings the smoke and gases of combustion to the front of the smoke chamber, forcing any downdraft or reverse current to the rear of the smoke-chamber, where it meets the level smoke shelf and is turned and carried upward again.

The valve plate is readily removable and is adjustable to any size smoke opening desired, being operated by a ratchet handle just under the arch at the front and center of the fireplace, practically out of sight and not defacing the brick or tile facings as do the handles of some dampers.

STRENGTH—The front flange is well ribbed, of ample strength to act as a lintel and its upper surface has a slight camber (3/32 inch to the foot).

TEST—We believe that this throat and damper used as shown, and in connection with our **reinforced cement smoke chamber**, produces the best-working fireplace that it is possible to build. We have tested it out for a year under varying conditions and it has proved entirely successful.

APPEARANCE—The shape of fireplace shown in this illustration, with sloping jambs and back, is the most graceful and

"A.B.C." SYSTEMS.

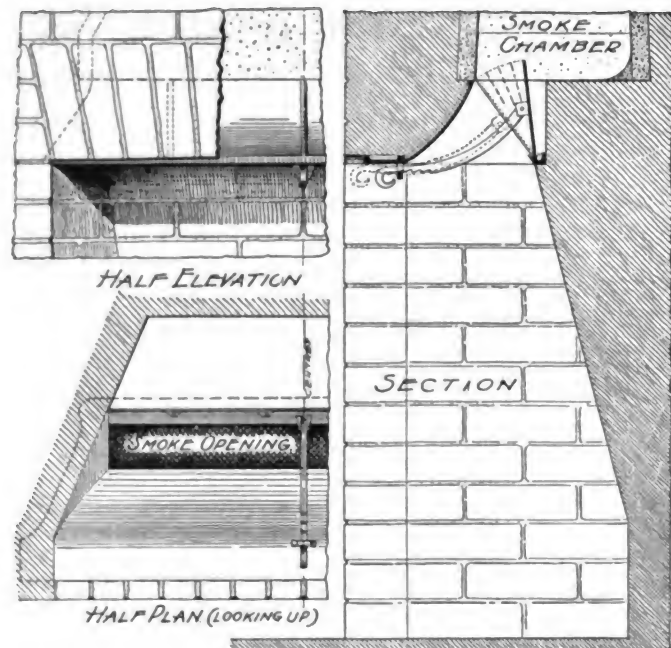


ILLUSTRATION OF "COVERT IMPROVED" FIREPLACE DAMPER
SCALE 1/2 INCH TO THE FOOT

effective, and we have made our damper to match this shape. If square jambs are desired it is necessary to use the next larger size damper.

DIMENSIONS AND PRICES.

THROAT AND DAMPER				SMOKE CHAMBER		
Damper Number	Width of Fireplace	Code Word	Price	Code Word	Size Flue, Inches	Price
524	24 inches	Intro	\$3.25	Seam	8x 8	\$3.50
530	30 "	Impart	3.75	Sutro	8x 8	4.00
532	32 "	Impel	4.00	Spear	8x12	4.50
536	36 "	Inert	4.25	Suter	8x12	4.50
542	42 "	Infer	4.75	Supine	8x12	5.00
548	48 "	Impost	5.25	Saline	12x12	6.00
554	54 "	Incur	6.00	Sail	12x16	9.00
560	60 "	Impale	6.75	Song	12x18	10.00

COST—Its economy of construction enables us to sell this improved fireplace throat and damper at a lower figure than our old form of damper.

WHEN SPECIFYING—Specify the "Covert Improved," and do not forget to specify also the **cement smoke chamber** if you desire the most satisfactory result.

See preceding page for illustration of the Cement Smoke Chamber.

Edwin A. Jackson & Bro.

(Incorporated)

Manufacturers of Jackson Ventilating Grates and Fireplace Fixtures

50 BEEKMAN STREET
 NEW YORK

PRODUCTS—JACKSON VENTILATING GRATES, WOOD MANTELS, ANDIRONS, SPARK GUARDS, FRANKLINS, AND EVERY KIND OF FIREPLACE FIXTURES

TECHNICAL DESCRIPTION—The Jackson Ventilating Grate is an open fireplace with heat-saving chamber at the back and side and top, and with a cold-air box connection with fresh outdoor air. It can be used successfully in any fireplace, old or new, that has at least a fairly good draft; all that is necessary is to cut through the back hearth for the air supply. Any good mason can set the grate.

The air supply should be taken from the direction of the prevailing cold winds, running a 6-inch pipe across the cellar ceiling when necessary to get this exposure. The exterior opening is the size of a brick, $8\frac{1}{8}" \times 2\frac{3}{4}"$, and we supply an oxidized iron grating to cover this opening, for 50 cents each.

The air inlet, at the hearth level, for the No. 1 Ventilating Grate is 18 inches long, for the No. 3 is 20 inches long, and for the No. 5 is 26 inches long. The ash-pit opening is not necessary if not wanted.

One flue carries the smoke and the hot-air pipe. This pipe is of No. 24 gauge galvanized iron and usually lasts a dozen years, when it can easily be renewed. The pipe is in 2-foot sections and is put up the flue from the open fireplace.

FLUE REQUIRED—The ideal flues for these grates are without sharp turns; inside size about 8x12 for the Oliver, and about 8x8 inches for the Concord. The grates can be adjusted to other sizes. For soft coal, also for the No. 5 size, the flues should be slightly larger.

TWO PATTERNS—The Oliver pattern, shown in sectional cut, heats on two floors. The Concord is of similar construction, but has no connection for upper rooms.

TABLE OF DIMENSIONS

No.	OUTSIDE OF FRAME		GRATE OPENING		FIREPLACE TO RECEIVE GRATE			HEATING POWER IN ZERO WEATHER
	Wide	High	Wide	Deep	Wide	High	Deep	
0	27 in.	30½ in.	18½ in.	13 in.	24 in.	30½ in.	14½ in.	5000 cu. ft.
1	30½ in.	30½ in.	22 in.	13 in.	29 in.	30½ in.	14½ in.	6000 " "
3	32½ in.	33½ in.	24 in.	13 in.	31 in.	33½ in.	14½ in.	7000 " "
4	37 in.	30½ in.	28½ in.	13 in.	36 in.	30½ in.	14½ in.	8000 " "
5	40½ in.	33½ in.	32½ in.	13 in.	39 in.	33½ in.	14½ in.	9000 " "

ADVANTAGES OF VENTILATING GRATES—

FIRST—Four times the heat of the usual open fireplaces.

SECOND—Thorough and economical heating of large residences in Spring and Fall and of small residences in severe weather.

THIRD—Perfect Ventilation without cold drafts.

FOURTH—An open fireplace heating on two floors.

FIFTH—Complete combustion of any fuel, resulting in good draft without gas or smoke.

DESIGNS AND FINISHES—All metal finishes can be secured, including Bower-Barff rustless, plated and solid bronze.

SPECIFICATIONS—For ventilating Grate heating on two floors. Supply and install for the fireplace of, the Jackson Ventilating Grate, Oliver pattern, number size finish

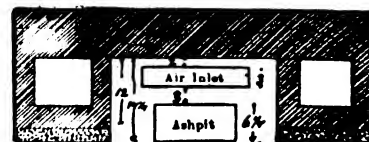
For Ventilating Grate heating on one floor—Supply and install for the fireplace of, the Jackson Ventilating grate, Concord pattern, number size finish

"A.B.C." SYSTEMS



SECTION OF OLIVER VENTILATING GRATE

Air Supply can be piped when in an interior chimney—Ashpit connection can be omitted



PLAN OF FIREPLACE

DELIVERY—Goods are usually in stock for prompt shipment.

Colonial Fireplace Company

4644 WEST TWELFTH STREET
CHICAGO, ILLINOIS

PRODUCTS—BRICK FIREPLACES; BRICK MANTELS; FIREPLACE TRIMMINGS, FENDERS AND ANDIRONS; BASKET GRATES AND GAS LOGS; SPECIAL WROUGHT-IRON WORK FOR FIREPLACES; AND IMPROVED COLONIAL HEAD THROAT AND DAMPER

FIREPLACES—We make homelike, old-fashioned fireplaces in a wide variety of designs, adapted to modern requirements. The Colonial line includes fireplaces designed for the most modest cottage as well as the most expensive home, at prices to correspond.

UNIQUE FEATURES—All Colonial Fireplaces are equipped with the Colonial Improved Head which insures a smokeless fireplace, perfect combustion and perfect draft; controlled without soiling the clothes or hands. Every Colonial Fireplace order is accompanied by a one-inch scale drawing as well as a full-sized detail. Every molded and arch brick is ground to fit, and numbered. A corresponding number appears on the detail drawing and furnishes a positive guide to the mason in erecting.

MATERIALS—We make a specialty of furnishing proper materials—complete or in part—for genuine fireplaces of every description, giving the purchaser the advantage of procuring from one source Brick, Tiles, Iron and Fireclay Linings, Soapstone, Mortar Colors, Dampers, Ash Pit Doors, Ash Traps, Coal Chutes, Andirons, Grates, Fenders, Hoods, Screens, etc., all carefully packed and shipped from one point.

We shall be pleased to submit special designs embodying the ideas of the architect for his approval, or will work to and submit prices complete on any special design furnished us.

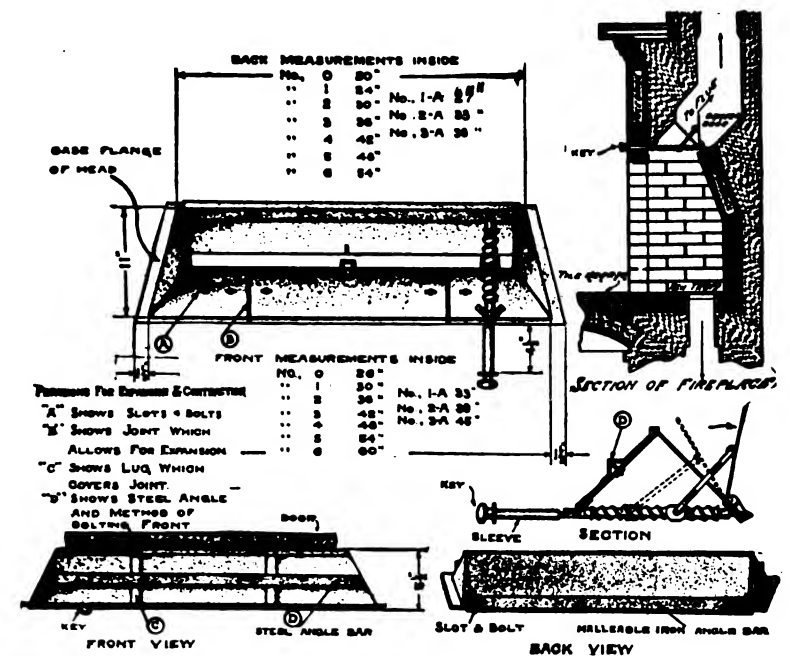


DESIGN NO. 14

NOTICE—Our handsome Colonial Portfolio of Fireplace Designs has been prepared especially to meet the requirements of architects. When writing, request Edition "C."

DESCRIPTION OF COLONIAL HEAD THROAT AND DAMPER—The Colonial Head Throat and Damper is cast in

sections and built to stand heat and weight. It is constructed of the best gray-iron castings, reinforced with steel angle and malleable iron, expansion and contraction being provided for automatically, thus avoiding any possibility of cracking the face of the fireplace.



SECTIONAL DETAILS OF IMPROVED COLONIAL HEAD THROAT AND DAMPER

ADVANTAGES—These dampers prevent mistakes in building the fireplace at its most vital point. The damper door and screw attachment may be easily removed at any time for the purpose of clearing throat of soot or mortar. When backing up facing with common brick, the center rib or ledge prevents the backing from settling down and pushing the facing outward. It is adaptable to all conditions of construction and is easy to set. It is so easily operated that any child can manipulate it and perfectly adjust the draft and escapement. It insures the greatest amount of heat radiation and with the most perfect smoke escapement. The Colonial is the most economical Throat Damper made, saving its entire cost in economy in the labor of erecting the fireplace.

SIZES OF FIREPLACE AND FLUE OPENING

No.	Fireplace Opening, Inches Wide	Size of Flue, Inches	One-Piece Head Built in Sections for Expansion	Code Word
0	24 to 28	8 x 8		Duke
1	29 to 32	8 x 12		Prince
1A	33 to 35	8 x 12		Valet
2	36 to 38	8 x 12		Regent
2A	39 to 41	8 x 16		Butler
3	42 to 44	8 x 16		Queen
3A	45 to 47	8 x 16		Page
4	48 to 52	12 x 12		King
5	52 to 58	12 x 12		Rex
6	58 to 64	12 x 16		Czar

Federal Sign System (Electric)

District Offices

BALTIMORE, MD., 27 South Gay Street
BUFFALO, N. Y., 130 Franklin Street
CINCINNATI, OHIO, 37 East Third Street
COLUMBUS, OHIO, 63 East Spring Street
DETROIT, MICH., 199 Jefferson Avenue,
East
KANSAS CITY, MO., 207 East 15th Street
LEXINGTON, KY., 134 West Short Street
LOUISVILLE, KY., 126 South Third Street

HOME INSURANCE BUILDING

CHICAGO, ILL.

Home Office
229-231 West 42d Street
NEW YORK CITY

FEDERAL

District Offices

MINNEAPOLIS, MINN., 822 Mary Place
NEW ORLEANS, LA., 840 Gravier Street
OKLAHOMA CITY, OKLA., 9 North Dewey
Street
PHILADELPHIA, PA., 1518 Sansom Street
PITTSBURGH, PA., 3 Wood Street
ST. JOSEPH, MO., 203 North Fourth Street
ST. LOUIS, MO., 313 North 11th Street
SAN FRANCISCO, CAL., 39 Fifth Street

PRODUCTS—ELECTRIC SIGNS; ELECTRIC FIXTURES, CLUSTERS AND UNITS FOR TUNGSTEN LAMPS. UNITS AND CLUSTERS FOR HIGH-CANDLE-POWER TUNGSTEN LAMPS; PORCELAIN-ENAMELED STEEL CLUSTERS, UNITS AND SHADES

FEDERAL LOCK-CLAMP SOCKETS AND BUSHINGS, DI-EL-ITE INSULATING JOINTS, FEDERAL ADAPTABLE FLOOR BOXES, FEDERAL BONDING CLAMPS, FEDERAL ELECTRIC VACUUM CLEANERS, FEDERAL ELECTRIC WASHING MACHINES, FEDERAL ELECTRIC KITCHEN CABINETS AND HOUSEHOLD POWER TABLES

Descriptive Bulletins on any of the above mailed on request.

FEDERAL PORCELAIN ENAMELED STEEL CLUSTERS—These Clusters have been used in many large factory and shop installations, where they have displaced arc lamps by their superior efficiency and economy. The original cost of these fixtures and the cost of maintenance and operation is much lower than any other system of equal efficiency.

The Federal patented porcelain-enameled steel shade fixture has the following advantages over other types of outdoor fixtures: Shade and dome being in one piece, absolutely exclude moisture or dust from the wiring; the shade is porcelain-enameled inside as well as outside, thereby enclosing the wiring in a perfectly insulated glass-lined chamber.

The center disk is attached to the supporting crowfoot by non-rusting brass screws and the sockets are the Federal weatherproof No. 303 porcelain receptacles wired with standard No. 14 wire, making the use of insulating joints unnecessary with these fixtures.

This type of cluster is made in two sizes, 15-inch and 20-inch. The 20-inch allows a wider spacing between the sockets, and the wider reflecting surface gives a better distribution of light. The maximum capacity of the 20-inch is four 100-watt or six 60-watt lamps, and that of the 15-inch is four 60-watt or five 40-watt lamps.

LIST PRICES

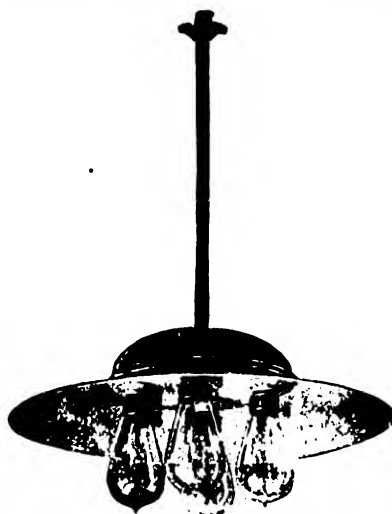
No. of Lights	No. 782 Clusters 15-inch Shade	20-inch Shade
2	\$3.80	\$5.50
3	4.20	5.90
4	4.60	6.30
5	5.00	6.70
6	....	7.10

HIGH-CANDLE-POWER UNITS

The 250 and 500-watt Tungsten Lamp Fixtures are the latest development of high-candle-power lighting units. For steady bril-

liancy of illumination and economy of current consumption they are unique and are being used extensively for lighting large areas.

No. 636 Unit, designed for 500-watt Tungsten Lamps, has a 20-inch glass bowl shade with 10-inch opening and spun brass dome, 10 1/4 inches in diameter. Has 10-inch white porcelain-enameled steel disk, wired with large base-socket. Has 5/16-inch chain hanging and stem of 1-inch casing with 7-inch brass canopy. Standard finish brush brass. LIST PRICE—No. 636. Unit, without lamp, each.....\$13.85



782-E—20-INCH SHADE



NO. 752—CLUSTER



NO. 765—CLUSTER

FEDERAL INDOOR CLUSTERS

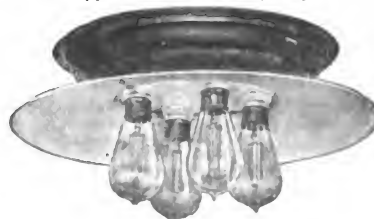
For use with Tungsten Lamps

FEDERAL CLUSTERS—Simple, effective, inexpensive clusters for stores or public buildings, designed with a view

of making expensive glassware unnecessary. The clusters are furnished with a porcelain glass reflector. The center disk in which the sockets are placed is made of white porcelain-enameled steel. This arrangement gives an excellent reflecting surface. Any of our clusters will be wired with sockets on two circuits without extra charge, if division desired is specified in ordering.

Dimensions	No. of Lights	LIST PRICES	
Diameter of shade, 20 inch—		No. 752	No. 765
Length of stem, 18 inch.....	2	\$7.70	\$12.10
Diameter of stem, 1 inch.....	3	8.10	12.50
Diameter of canopy, 6½ inch.....	4	8.50	12.90
Diameter of dome, 10 inch.....	5	8.90	13.30
Maximum size of lamps, 100-watt.....	6	9.30	.....

Standard finish, brush brass. Polished brass or bauer barff without extra charge. Oxidized copper, brass or nickel, 10 per cent extra. Prices on other finishes on application.



NO. 754—CLUSTER



NO. 757—CLUSTER

Federal Ceiling Clusters are effectively installed on low ceilings or under a balcony. They are of the same general dimensions as Nos. 752 and 765, but have a ceiling band 16 inches in diameter in place of stem or chain suspension.

Federal Clusters with diffuser bowls, as Nos. 765, 767, are especially adapted for use in schools, drafting rooms and places where the advantages of indirect lighting without loss of efficiency is desired.

Number of Sockets	No. 757 Cluster	Number of Sockets	No. 757 Cluster
3	\$11.40	5	\$12.20
4	11.80	6	12.60

Discounts on Application. Prices f.o.b. Chicago.



NO. 636—500-WATT UNIT

The Globe Electric Specialties Co., Inc.

Manufacturers of

All Kinds of Electrical Apparatus for the Theater

363 WEST 42nd STREET

NEW YORK, N. Y.

H. Bissing, Mgr.

Telephone, Bryant 5503

PRODUCTS—STAGE AND WALL-TYPE RECEPTACLES; PORTABLE PLUGGING BOXES; STAGE LAMPS AND SOCKETS; STRIP LIGHTS; SKIOTICONS; SWITCHBOARDS AND ALL ELECTRICAL ACCESSORIES used for Lighting and Scenic Effects in Theaters, Parks, etc.; ELECTRIC SIGNS

DESCRIPTION—We manufacture everything electrical for Theatrical Companies, Theaters, Parks, and Moving Picture Houses. After ten years of actual experiment and careful study of theater requirements on the road, our best and strongest equipment in Stage Lighting Apparatus and Material is offered to meet all usual conditions and at reasonable prices. The following details concerning some of our electrical productions are worthy of consideration:

ACADEMY TYPE THEATER SWITCHBOARD—While all types of Live Front Theater Switchboards are produced at our factory, special attention is directed to our "Academy Type" Dead Front Board, the rear view of which appears in the accompanying illustration. The live parts of this Switchboard are mounted on tables behind the board, and the simplicity of the wiring arrangements avoids the flash from the switch when making a dark change in the scenery. There is no danger of a short circuit and the accidental contact of costumes and other inflammable objects is made impossible.



ACADEMY SWITCHBOARD
Rear View

"A.B.C." SYSTEMS

We have now ready for sale a new type of Board, with switches mounted in the rear, which eliminates all the wiring troubles incidental to those at present on the market. Our switchboard building has recommended itself to experts both for its durable construction and artistic design.

PORTABLE STAGE PLUGGING BOX—We use only new-code fuses. The individual units are encased with aluminum and easily removable. They cannot break; any plug fits them.

ELECTRIC STAGE EFFECTS—Our expert, skillful workmen in this line will furnish any desired electric scenic effect. The ideas of patrons are considered with our own in producing special effects, such as ocean waves, clouds, flames, etc.

GLOBE STAGE POCKETS—These may be used for gallery arc outlets, picture-machine outlets, calcium bridges, auto charging and other purposes.

GLOBE OUTLINE STRIPLIGHTS—As made by us they replace condulets for outline lighting. Buildings may by this method be outlined with incandescent lights at a cost 50 per cent. cheaper than with condulets and pipes.

ENCLOSED PORTABLE STRIPLIGHTS—These are designed for general stage use where there is limited space, or where a large number of lamps are wanted concentrated.

Globe Borders and Footlights—May be furnished on short notice and are especially designed for each stage.

ELECTRICAL SIGNS—Mechanical, trademark, sparkle and other Electric Signs made by us are simple, strong and durable, rich and dignified in appearance, and moderate in first cost as well as in maintenance charges.

REFERENCES—Our Electrical Stage Specialties are in use in the following theaters:

MANHATTAN

Liberty
New York
Gaiety
Plaza
Colonial
Alhambra
Comedy
Lincoln Square
Bryant
Folies Bergere

BROOKLYN

Casino
Orpheum
Empire
and many other Theaters throughout the United States and Canada
Oxford
Crescent
Grand Opera House

The following productions have recently been equipped by us:

Ben Hur, Pink Lady, Madame Sherry, Rebecca of Sunnybrook Farm, Trail of the Lonesome Pine, Round Up, Kismet, Anna Held, Littlest Rebel, etc.

WRITE FOR CATALOG



ELECTRIC SPARKLE SIGN
Night View



GLOBE STAGE POCKET

The Phoenix Glass Co.

Manufacturers of Illumination Glassware, Globes, Shades, Etc.

NEW YORK, N. Y.
15 MURRAY STREET

BOSTON, MASS.
161 SUMMER STREET

CHICAGO, ILL.
HEYWORTH BUILDING

PITTSBURGH, PA.
2nd NAT. BANK BLDG.

PRODUCTS—GLOBES AND REFLECTORS in all Sizes and Styles for all Kinds of Lamps, including gas, electric, acetylene, oil, etc. Over 15,000 different Designs embracing all the different Styles of Decorations and the newest Ideas in lighting

TUNGSTEN REFLECTORS for all sizes of lamps; SHOWER GLOBES in etched, cut and colored glass; DIFFUSING BALLS, ORNAMENTAL DIFFUSING BOWLS for semi-indirect lighting; SPECIAL ORIGINAL DESIGN GLOBES made from architect's sketches, etc.

DETAIL DESCRIPTION—Careful examination and comparison with the product of other manufacturers will show there is no other glassware made that has the same correctness and beauty of design and excellence of workmanship. The difference between our globes and ordinary globes can be readily seen in the clean, sharp etchings, fine sparkling cuttings, absence of mould marks, daintily-colored decorations, carefully ground edges and accurate uniform roughing. "Phoenix-Quality" Globes have held first place for over 30 years because their appearance never disappoints.



10617½
ELECTRIC SHADE



10069½
ELECTRIC BALL SHADE



10350
ELECTRIC STALACTITE

"A.B.C." SYSTEMS



10710½
ELECTRIC SHADE



10708
CEILING BOWL



10713
ELECTRIC STALACTITE

the glare of the Tungsten lamp to a pleasant mild light. They reflect the maximum amount of light, producing the most efficient illumination. Made for all sizes of Tungsten lamps. "Pheno" catalog and information on request.

INFORMATION—Our expert services are always at the call of architects in planning lighting and for selecting the best globes suitable for the work.

A FEW INSTALLATIONS OF "PHOENIX-QUALITY" GLOBES:

Auditorium Hotel, Chicago
Bellevue-Stratford Hotel, Philadelphia
Colorado State Capitol Bldg., Denver
New Plaza Hotel, New York City
Minnesota State Capitol Bldg., St. Paul
Hotel Belmont, New York City
Knickerbocker Hotel, New York City
Manhattan Hotel, New York City
Pennsylvania State Capitol Bldg., Harrisburg
Waldorf-Astoria Hotel, New York City

CATALOGS—Sent on request. Mention class of lighting interested in.

PRICES—Are moderate. Price Lists or estimates on inquiry.



10593½
ELECTRIC SHADE



T. B. "PHENO"
TUNGSTEN REFLECTOR



T. F. "PHENO"
TUNGSTEN REFLECTOR

Nelson Weeks

Manufacturer of Reflectors and Stage Lighting Equipment

217 WILLIAM STREET
NEW YORK, N. Y.

Telephone Connection

PRODUCTS—REFLECTORS, for direct and indirect Lighting; SPECIAL REFLECTORS, for special Purposes; STAGE LIGHTING EQUIPMENT

DESCRIPTION—Our long experience (almost half a century) in illumination practice is embodied in modern devices manufactured by us to meet all requirements concerning the reflection of light. These lighting contrivances are adapted to all situations and problems, ranging from show windows to theaters and art galleries, from limited spaces to large areas.

We make Reflectors for churches, public halls and theaters, museums and art galleries, hospitals, markets, depots, banks and bank screens, etc., indirect lighting reflectors for skylight and cornice coves in banks, entrance halls, private residences, hotel lobbies, squash courts, etc.

Special Reflectors are made in any desired design and for any special purpose required. Designs furnished upon request.

Our Standard Reflectors, always kept in stock, are made only of the best material.

DETAILS OF CONSTRUCTION—FLAT MIRROR REFLECTORS—Made with metal, corrugated or opal reflecting surfaces. Sizes vary from 7" to 24" in diameter, and list prices run from \$0.80 to \$4.40 each. The 7" and 8" sizes fit $\frac{2}{3}$ " holders only; 10", 12", 14", 16" and 18" diameter sizes are made to fit both $\frac{2}{3}$ " and $\frac{3}{4}$ " diameter holders; 20" and 24" sizes fit $\frac{3}{4}$ " diameter holders only.

DEEP-CONE MIRROR REFLECTORS—Same construction as Flat Mirror style. Sizes, 7", 8", 10" and 12" in diameter, and list prices run from \$0.90 to \$1.30 each. The 7" and 8" fit $\frac{2}{3}$ " diameter holder only; the 10" and 12" sizes fit both $\frac{2}{3}$ " and $\frac{3}{4}$ " diameter holders.

STORE-WINDOW REFLECTORS—Neat in appearance, compact in form and solidly constructed. We claim this to be the best reflector on the market for this purpose. Lined with silver-plated corrugated glass, French mirror or corrugated metal, and furnished with lamp sockets spaced 9 or 12 inches apart. The reflectors, made at a proper angle, eliminate all dazzling effect.

CASE REFLECTORS—A contracted form of store window lighting applied to show cases and made of same quality of manufacture.

STAGE BORDER, STRIP AND FOOT LIGHT—The most practical device for stage lighting. Adopted by leading theaters, and approved by Board of Fire Underwriters. Made in any lengths to suit all problems in stage lighting. Details can be specially adapted to suit each case.

ART-GALLERY REFLECTOR—This is the standard reflector for lighting pictures and other works of art. Even diffusion of light is skilfully arranged. We have made a special study of this particular field and have lighted the leading public and private art galleries in the country. Made in plain as well as in highly ornamental designs for use in either commercial or in public and private art galleries and museums.

"A.E.C." SYSTEMS



AN EXAMPLE OF CHURCH-CHANCEL LIGHTING

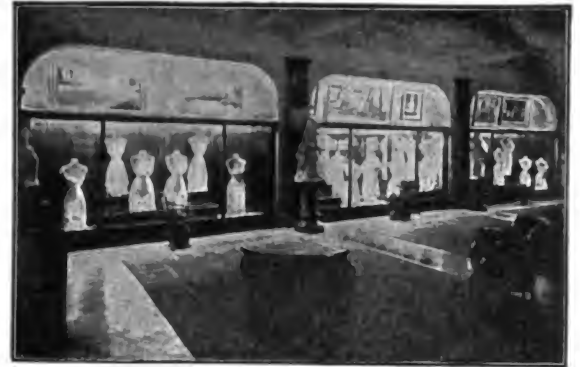
Getting the light from above with the "Halo Effect."



ENTRANCE HALL OF THE NEW GERMANIA LIFE BUILDING

This is probably one of the best examples of indirect lighting in New York. No lights are in sight except at the elevator, under the stairs.

EXPERT INFORMATION—As we may justly claim to be authority on theater and picture lighting, we would invite architects to consult with us when drawing plans in these lines.



PICTURE AND SHOW-CASE LIGHTING

A novel arrangement for lighting pictures and show cases in an up-to-date sales office in New York.



SHOW-WINDOW LIGHTING

A well-lighted show window using our well-known type of window reflector with Tungsten lamps.



INTERIOR OF THE NEW HOME OF THE EAST RIVER SAVING INSTITUTION

The desks are lighted with the Weeks' special bank screen reflectors. Everything in this bank was selected because of quality.

W. B. Brown Company

Manufacturers of
Wood Gas and Electric Fixtures
BLUFFTON, IND.

PRODUCTS—WOOD GAS, ELECTRIC AND COMBINATION FIXTURES, stationary or portable, for Residences, Stores, Club Houses and Churches

DESCRIPTION—The personal direction of Mr. W. B. Brown in the production of our original and characteristic designs of **Wood Lighting Fixtures** is to be credited for their artistic and appropriate effect. The wood used in their construction is principally **oak**, which is air-dried in our yards for at least one year, after which it is thoroughly kiln-dried to remove every particle of moisture. The cutting is true, and the highest grade of glue is used.

Fixtures are also made in Mahogany, Birdseye Maple, Black Walnut, Cherry or Circassian Walnut.

FINISHES—Our regular finishes are Weathered Oak, Early English, Gold-



ONE LIGHT MINIATURE
ELECTRIC PORTABLE

Height, 14 inches.
Shade, 5x5x5 inches.
Base, 4½x4½ inches.
Plug Cord and Candelabra
Socket.
Price, Plain Art Glass, \$4.00.

en Oak and Fumed. We do not guarantee to match finishes classified by other manufacturers, but we do guarantee to match any finish if sample is sent us with order.

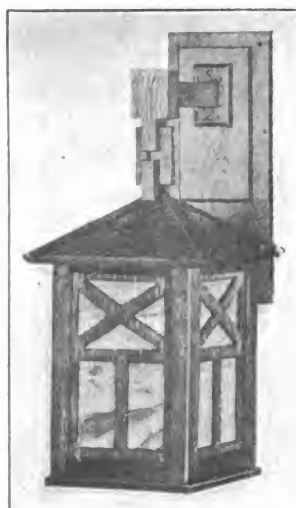
GLASS DETAILS—The glass work in connection with our fixtures, i. e., cases, shades, etc., are executed in plain, figured or leaded glass, in design to harmonize with the wood effect.

ADVANTAGES—Beautiful tone and color combinations in wood and glass, in conjunction with original and artistic design, producing an effect of harmony and warmth so desirable in the home, church, club, or elsewhere.

NOTE—Our electric fixtures are accepted by the National Board of Fire Underwriters.



ONE LIGHT ELECTRIC BRACKET
Extends, 9½ inches.
Wall Plate, 4½x12 inches.
Shade, 5½x5½x7 inches.
Price, Plain Art Glass....\$10.00



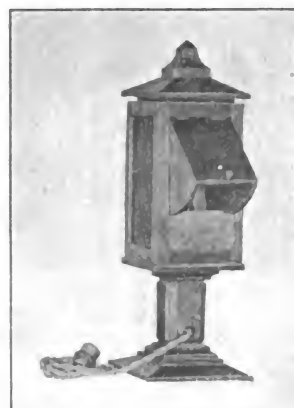
ONE LIGHT ELECTRIC BRACKET

Length, 20 inches.
Extends from wall, 10 inches.
Wall Plate, 5x13 inches.
Lantern, 8x8x12 inches.
Plain Art Glass.....\$9.00



TWO LIGHT ELECTRIC OR ONE LIGHT GAS PORTABLE

Height, 26 inches.
Shade, 18 inches.
Base, 7¼x7¼ inches.
Diameter of Standard, 2 inches.
Plug, Cord and Sockets furnished.
This portable has pull sockets.
Price, no beads.....\$20.00
Price, 4-inch Seed Beads.....22.00
Price, 4-inch Cut Beads.....27.00



ONE LIGHT COMBINATION GAS AND ELECTRIC BRACKET

Length from Top of Gas Outlet to Bottom of Shade, 12 inches.
Extends from Wall, 10 inches.
Wall Plate, 5¼x10¾ inches.
Electric Shade, 6x6x6 inches.
Price, Plain Art Glass...\$8.00
Gas Burner not included; Glassware not furnished.



ONE LIGHT ELECTRIC PENDANT

Length, 30 inches.
Shade, 5½x5½x8 inches.
Canopy, 5½x5½ inches.
Price, Plain Art Glass.....\$6.50

H. W. Johns-Manville Co.

ALBANY
ATLANTA
BALTIMORE
BIRMINGHAM
BOSTON
BUFFALO
CHICAGO
CINCINNATI

CLEVELAND
DALLAS
DETROIT
DULUTH
HOUGHTON
HOUSTON
INDIANAPOLIS
KANSAS CITY

LOS ANGELES
LOUISVILLE
MEMPHIS
MILWAUKEE
MINNEAPOLIS
NEWARK, N. J.
NEW ORLEANS
NEW YORK

OKLAHOMA CITY
OMAHA
PHILADELPHIA
PITTSBURGH
PORTLAND, ORE.
RICHMOND, VA.
ROCHESTER
SAN FRANCISCO

SEATTLE
ST. LOUIS
ST. PAUL
SYRACUSE
TACOMA
WASHINGTON
WILKES-BARRE

ASBESTOS

TRADE MARK

For our Catalog on Building Materials see Section 6C, Cat. 3

For our Catalog on Roofing Materials see Section 26B, Cat. 8

For our Catalog on Pipe and Boiler Coverings see Section 28D, Cat. 2

For our Catalog on Refrigerating Machines and Insulating Materials see Section 32A, Cat. 5

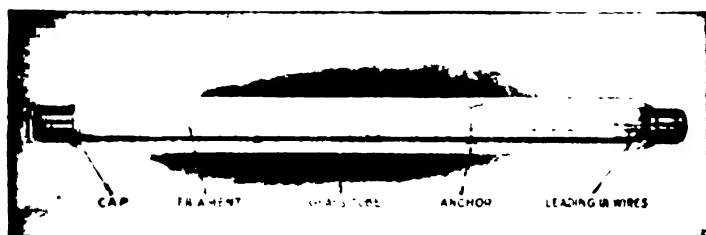
PRODUCTS—Electrical Materials: "NOARK" STANDARD FUSE DEVICES, "NOARK" SERVICE BOXES, J-M LINOLITE SYSTEM OF ELECTRIC LIGHTING for Show Windows, Show Cases, Theater Stages, Signs, FRINK REFLECTORS, J-M FIBRE CONDUIT, etc.

Insulating and Sheathing Materials: J-M HAIR FELT, J-M PURE COMPRESSED CORK SHEETS, J-M IMPREGNATED CORK BOARDS, J-M ROCK WOOL INSULATING BLOCKS; J-M MINERAL WOOL, J-M ASBESTOS FIRE AND DAMPROOF FLOORING FELT, AUDIFFREN-SINGRUN REFRIGERATING MACHINES

Pipe and Boiler Coverings: J-M ASBESTOCEL, J-M ASBESTO-SPONGE FELTED, J-M 85% MAGNESIA, J-M ASBESTOS FIRE-FELT, J-M VITRIBESTOS, J-M AIR CELL, J-M ANTI-SWEAT, J-M ZERO, J-M PLUMBING, J-M BRINE AND AMMONIA, J-M SHEETS AND BLOCKS for Boilers, Heaters, etc., J-M ASBESTOS AND MAGNESIA INSULATING CEMENTS, J-M SECTIONAL UNDERGROUND CONDUIT

J-M LINOLITE SYSTEM OF ELECTRIC LIGHTING

DESCRIPTION—The J-M Linolite Electric Lamp comprises a glass tube about a foot long, having a uniform diameter of 1 inch. It has a straight carbon or tungsten filament extending throughout, connected to metal caps at both ends, which form the terminals of the lamp.



J-M LINOLITE CARBON LAMP

The J-M Linolite Lamp is simply one of the elements in the J-M Linolite System of Electric Lighting. The system in its entirety includes the lamp, sockets, reflectors, electrical conduit, and means of support. The socket contains a fixed contact at one end, and at the other end a spring contact. The lamp can be put in place or taken out, almost instantly, by inserting one end in the side of the socket having the spring contact, pressing it back slightly, and allowing it to slip into the socket at the other end. The contacts are concealed in and protected by the reflector or metallic support of the lamp. This does away with the danger of fire from defective wiring.

ADVANTAGES—(1) A line of light instead of spot lighting. The filament extending throughout the tube produces a continuous line of light of equal brilliancy from end to end. This means

a more even distribution of light, which is actually controlled by scientifically constructed reflectors.

(2) J-M Linolite Lamps have a glass area of 31 sq. in. and a perfect vacuum, so that their useful life is from 1200 to 1500 hours, or about 50% longer than ordinary bulb lamps and about 150% longer than ordinary base tubular lamps.

The regular tubular lamp has a glass area of 17.8 sq. in. and an unsatisfactory vacuum, so it is exceedingly frail. The estimated useful life of this lamp is 500 hours.

The ordinary bulb lamp has a glass area of 25.6 sq. in. and a medium grade vacuum. It will blacken in about 800 hours.

When the carbonization of a lamp reduces the original candle-power 20% it is generally considered that the lamp has reached the end of its useful light—and that the length of time required for a lamp to carbonize is in proportion to its glass area and degree of vacuum.

(3) Occupies minimum space. In show-cases and cabinets, book stacks, indirect lighting systems, bank and insurance companies, squash courts, bowling alleys, billiard rooms, J-M Linolite Lamps occupy less space than any other desirable form of illumination.

FRINK REFLECTORS, REFLECTING CHANDELIERS, AND OTHER LIGHTING SPECIALTIES—

DESCRIPTION—We have a fully organized Illuminating Department, including engineers and specialists, and are prepared to submit proposals for the most efficient and economical illumination of Art Galleries, Libraries, Armories, Squash Courts, Schools, Churches, Gymnasiums, Billiard Tables, Bowling Alleys, Public Buildings, Show Windows, Show Cases, Stores and Theatres; also Border and Foot Lights, Exit Signs, etc.

Among the Frink Products, which have long been recognized as embodying the highest perfection in art, efficiency and quality, are Frink's Special Patent Approved Window Reflectors, Show-Case Reflectors, Mirror-Lined and Porcelain-Enameled Steel Shades, Frink's Patent Portable Lamp Guards, Picture Reflectors, Cluster Reflectors, Reflectors for Bank Screens and Double Desks, and artistically designed Lighting Specialties in brass, bronze and plain metal.

ADVANTAGES—The lamps are concealed from view. The light is thoroughly distributed, giving an even diffusion with no shadows. The silvering on the reflectors cannot be scratched or marred. Ample ventilation is provided for in the design of the reflectors. There is no breakage from expansion or contraction. The silver-plate corrugated glass in the reflectors delivers 50% more light with the same current than any all-glass unsilvered reflectors on the market.

CLASSIFICATION PAGE OF
SECTION 43

**Furniture and Fine Fixtures, Furnishings, Decoration,
Decorative Work and Ornament**

(Metal Furniture and Specialties see Section 40)

Section Synopsis

A. Domestic, Office, Bank, Library, Theater, Factory, Hospital, Asylum, Court, Hotel, Restaurant and Saloon Furniture and Fine Fixtures; Collapsible, Knocked-down and Combination Furniture; Announcement Boards; Antiques; Upholstery; Bedding; Awnings; Tents; Ceramics; Bronzes; Table Ware, Linen, Cutlery and Similar Furnishings

B. Church Seating; Altars, Fonts, Furniture, Lecterns, Vessels, etc.; Theater and School Seating

C. Draperies and Curtains of all materials; Carpets and Rugs; Mats; Window Shades; Venetian Blinds; Wall Papers;

Leather, Textile and Special Fabric Coverings and Tapestries, for walls and ceilings; Linoleum; Oil Cloth

D. Frescoing; Mural Painting; Marble and Glass Mosaic; Memorial Windows; Glass Painting; Sculptural Work, in all materials; Art Metal Work; Art Faience

E. Architectural and Ornamental Work in Plaster and Composition; Decorative Work, in all materials; Antiques; Carving in Wood and Fine Metals; Stone Carving; Ivory Carving; Cameo and Intaglio Work, etc.; Architectural Modeling

Classification of Products, Subscribers' Catalogs and General Firm Names

EXPLANATION.—The Sub-Index is an alphabetical list of products in detail, numbered consecutively and running through the several groups of a Section. Corresponding numbers, placed

to the right of the names of firms, indicate that they make these particular products and others of the same class. On the left is given the Number and Location of each catalog.

SUB-INDEX	
REGULAR CLASSIFICATION	
A	Announcement boards:— 1 Building directories 2 Bulletin boards 3 Hospital patients' registers 4 Hotel room racks 5 Telephone racks 6 Antiques, furniture, textiles, etc. 7 Awnings, tents 8 Awning cloth 9 Bedding 10 Bronzes, decorative 11 Burlaps, decorative, wall 12 Canvas, tents, paulins, covers 13 Ceramics, decorative 14 Collapsible and combination furniture 15 Deck cloth and roofing canvas 16 Duck, waterproof Furniture and fine fixtures:— 17 Asylum and hospital 18 Bank and office 19 Bathroom, mirrors, etc. 20 Court 21 Domestic 22 Factory 23 Garden, rustic, tree tubs, boxes 24 Hotel, saloon, restaurant 25 Knocked-down 26 Library 27 Medicine cabinets, wood 28 Upholstery, all branches
	35 Altars, all materials 36 Church furniture, sundries 37 Church and school seating 38 Fonts 39 Lecterns 40 Theater seating

C	45 Carpets, rugs 46 Coverings, wall, leather, paper, textile, special-fabric 47 Curtains, draperies, all materials 48 Linoleum, oil cloth 49 Mats, all kinds 50 Tapestries, walls, ceilings 51 Venetian blinds and awnings 52 Window shades and fixtures	
	D 60 Art faience 61 Art metal work 62 Frescoing 63 Marble and glass mosaic 64 Memorial windows, glass painting 65 Statuary work, all materials	
	E 73 Architectural and ornamental work in plaster and composition 74 Architectural modeling 75 Carving in fine metals, ivory, stone, wood 76 Decorative work in all materials	
	SPECIAL CLASSIFICATION Covers products belonging to other sections. Included in this section because not sufficiently extensive for separate cataloging in the section to which they belong.	
	81 Iron paint (S. 5) 82 Steel library stacks (S. 40 A) 83 Wall size (S. 39 D) 84 Waterproof compounds (S. 5)	
	TRADE NAMES AND BRANDS "Ariston" treated marble altars, fonts, etc., S. 9, Catalog 3 "Bayonne" roof and deck cloth, } S 26 B, Catalog 6 "Gulf Stream" roofing canvas,	

"Bull Dog" wall size, "Cott-a-lap," line of dyed and prepared burlaps, canvases, muslins. "Filmwood," wall covering, "Magic," wall size, "Carbonneale," iron paint, "Neverleak," waterproof duck, "Modern," Venetian blind, Catalog C 3 "Omala," wood medicine cabinets, S. 35 B, Catalog 2 "Santas" wall covering, Catalog C 2 "Universal" building directory, Catalog A 1		Catalog C 1		Catalog A 2	
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Cat. No.	Manufacturers having Catalog data in this Section	Sub-Index Numbers				
		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
A 4	Cobb, Jr., George W. New York, N. Y.	18	26	45 48		82
C 1	Cott-a-lap Co. Somerville, N. J.	11		46		83
A 2	Eberhardt & Co. . . Indianapolis, Ind.	7 8 12 15 16		49		81 84
C 2	Standard Oil Cloth Co. New York, N. Y.			46 48		
A 1	Universal Register Co. Chicago, Ill.	1 3 4 5 18				
C 3	Wilson Mfg. Co., Jas. G. New York, N. Y.	7		51		
A 3	Wollaege Mfg. Co. Milwaukee, Wis.	18 20	26			

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
Bollentin & Thompson..... New York, N. Y.			45			Crescent Art Metal Co..... Bridgeton, N. J.	10 17	27				Gimbel Bros..... New York, N. Y.			45 47		
Bowles, Frank..... New York, N. Y.	6					Curtis Bros. & Co..... Clinton, Iowa	18					Grand Rapids Furniture Co.. Grand Rapids, Mich.		21			
Bremner Co., J. R..... New York, N. Y.		21 24	45 46 47 48 50 51	73 76		Danner Mfg. Co., John.... Canton, Ohio		26				Hackner, E..... La Crosse, Wis.	36 37			63 65	
Brooklyn Chair Co..... New York, N. Y.	17 18 20	21 24 26 27				Decorators Supply Co..... Chicago, Ill.				73 74		Hale & Kilbourne Mfg. Co.. Philadelphia, Pa.		21			
Brown Furniture Co..... Syracuse, N. Y.	14	26		73		Dodge, William de Leftwich. New York, N. Y.				76		Harnisch, Ad..... Syracuse, N. Y.				73 74	
Brownell, C. H..... Peru, Ind.	18	25				Dubuque Altar Mfg. Co..... Dubuque, Iowa		35 36 37	64 65 73 74 75 76	81		Harwood's Sons, H. J..... Boston, Mass.	14	26 36 37 40			
Brunswick-Balke-Collender Co. New York, N. Y.		24				Duven Bros..... New York, N. Y.				76		Hayden Furniture Co..... New York, N. Y.		21			
Budde-Lindsay Mfg. Co..... Jackson, Tenn.		36				Edwards, Alfred G..... Brooklyn, N. Y.				76		Herts Bros..... New York, N. Y.				76	
Burlington Venetian Blind Co. Burlington, Vt.			51			Emmel Co..... Boston, Mass.			46	73		Himmel & Son, M. L..... Baltimore, Md.	18	24			
Carpenter & Co., Geo. B.... Chicago, Ill.	7					Excelsior Furniture Co..... Cincinnati, Ohio		35 36 37 39 40				Holliston Mills..... Norwood, Mass.			46 50		
Church Art Work Co..... New York, N. Y.	10	35 36 37		65		Fabrikoid Works..... Wilmington, Del.			46			Holmes Disappearing Bed Co. Los Angeles, Cal.	14				
Church Mfg. Co., C. F..... Holyoke, Mass.	19					Fischer & Jirouch Co..... Cleveland, Ohio				73 74 75 76		Hoosier Mfg. Co..... Newcastle, Ind.		21			
Columbia School Supply Co Indianapolis, Ind.		37				Ford & Johnson Co..... Chicago, Ill.		36 37 40				Huber & Co., H. F..... New York, N. Y.		21 36 37		76	
Columbian Shade Co..... New York, N. Y.			52			Forman, Geo. A..... Brooklyn, N. Y.				73 74		Jacobson & Co..... New York, N. Y.				73 74 75 76	
Crane & Mahoney..... New York, N. Y.				73		Freeman, Alfred Mt. Vernon, N. Y.				64		Johnson & Faulkner..... New York, N. Y.	11		47 50		
						Geissler, R., Inc..... New York, N. Y.	10	35 36 37 39	61 62 63 64	81							

Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers					Manufacturers without Catalog data	Sub-Index Numbers				
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100		1 to 20	21 to 40	41 to 60	61 to 80	81 to 100
Karpen & Bros., S. Chicago, Ill.	18 21	24 26										Schneider, F. H. Syracuse, N. Y.				73	
Kerr Co., J. E., Ltd. New York, N. Y.	11					Meisahn & Co. Baltimore, Md.	6 17 20	21 26 27 28		73 74	81	Seifert Plastic Relief Co., P. A. St. Louis, Mo.				73 74	
						Merrill Corporation Chicago, Ill.	14	21				Sherwood Co. Chicago, Ill.	37				
Kloss Co., F. J. New York, N. Y.	7					Milwaukee Ornamental Car- ving Co. Milwaukee, Wis.				73 74		Sloane, W. & J. New York, N. Y.	28	45 47 50			
						Nelson Co., W. P. Chicago, Ill.			46	76		Swedish Venetian Blind Co. New York, N. Y.			51		
Lamb, J. & R. New York, N. Y.			64			N. J. School & Furniture Co. Trenton, N. J.	37 40					Tiffin Mfg. Co. Tiffin, Ohio	35 36				
						Paddock Cork Co. Brooklyn, N. Y.	2					Tognarelli & Voigt Co. Philadelphia, Pa.				73 74 75	
Library Bureau New York, N. Y.	18	26				Pepper, C. H. New York, N. Y.			48			Trenton Oilcloth & Linoleum Co. Trenton, N. J.			48		
						Perfect Wall Bed Co. Chicago, Ill.	14					U. S. Changeable Sign Co. New York, N. Y.	1				
Lombard & Ludwig, Inc. Washington, D. C.				73 74 75		Plastic Relief Mfg. Co. Chicago, Ill.				73 74 76		Veit Mfg. Co. New York, N. Y.	18				
Lord & Taylor New York, N. Y.		28	45 47 50			Pottier & Stymus Co. New York, N. Y.		24 26 28	50			Wanamaker, John New York, N. Y.	28	45 47			
Lowenbein & Sons New York, N. Y.				76		Pray & Sons Co., J. H. Boston, Mass.			48			Wemple Co., Jay C. New York, N. Y.			52		
						Revell & Co., Alex. H. Chicago, Ill.	18	24	45 47			Whitman Studios Philadelphia, Pa.	35 36 37 38 39				
Mandel Bros. Chicago, Ill.			45 47			Richter & Co. Tenafly, N. J.			46			Wiggins Sons Co., H. B. Bloomfield, N. J.		45 46 50			
Marcotte & Co., L. New York, N. Y.	28			76		Righter & Kolb New York, N. Y.	28	46 47 50	62 63 76	81		Yawman & Erbe Mfg. Co. Rochester, N. Y.	18				
Marshall-Field & Co. Chicago, Ill.	28	45 47 50				Rogers & Co., C. P. New York, N. Y.	9										

Universal Register Co.

Manufacturers of the "Universal" Building Directory

1407-1417 W. JACKSON BOULEVARD
CHICAGO, ILL.

PRODUCTS—The "UNIVERSAL" BUILDING DIRECTORY, HOTEL ROOM RACK, HOSPITAL PATIENTS' REGISTER and TELEPHONE RACK

INTRODUCTION—The "UNIVERSAL" Directory is SOLD OUTRIGHT, thereby eliminating an enormous expense in yearly rentals.

CONSTRUCTION—The "UNIVERSAL" provides for a perfect alphabetical arrangement without the confusion encountered with an individual pocket construction. Every step in connection with placing and removing the cards is practical and convenient. The card space is accessible from the front of the board, enabling one to refer to the front of the card when making changes and doing away with the old system which required a typewritten slip pasted on the back of the card.

INSERTION and REMOVAL of CARDS—The card retainer of the "UNIVERSAL" interior consists of two continuous metal strips holding the cards at either end. Upon removing one card in a tier the others can be shifted up or down to any point in that tier.

STANDARD MARGINS—Are carefully adhered to in lettering all cards, giving a perfect alignment to names and room numbers.

INDIVIDUAL FLOOR SERVICE—Can now be installed in every Office Building, as our OUTRIGHT SALE system reduces the cost of Directory Service to a minimum.

FRAMES—The construction of the frame is $1\frac{5}{8}$ " thick. If desired, the Directory can be set into a recess in wall or

marble to a depth of $13/16$ ". Frames are furnished in any wood finish desired. An absolutely dust-proof interior is provided by a cushioned rubber strip placed between the two portions of the frame.

"UNIVERSAL" DIRECTORY

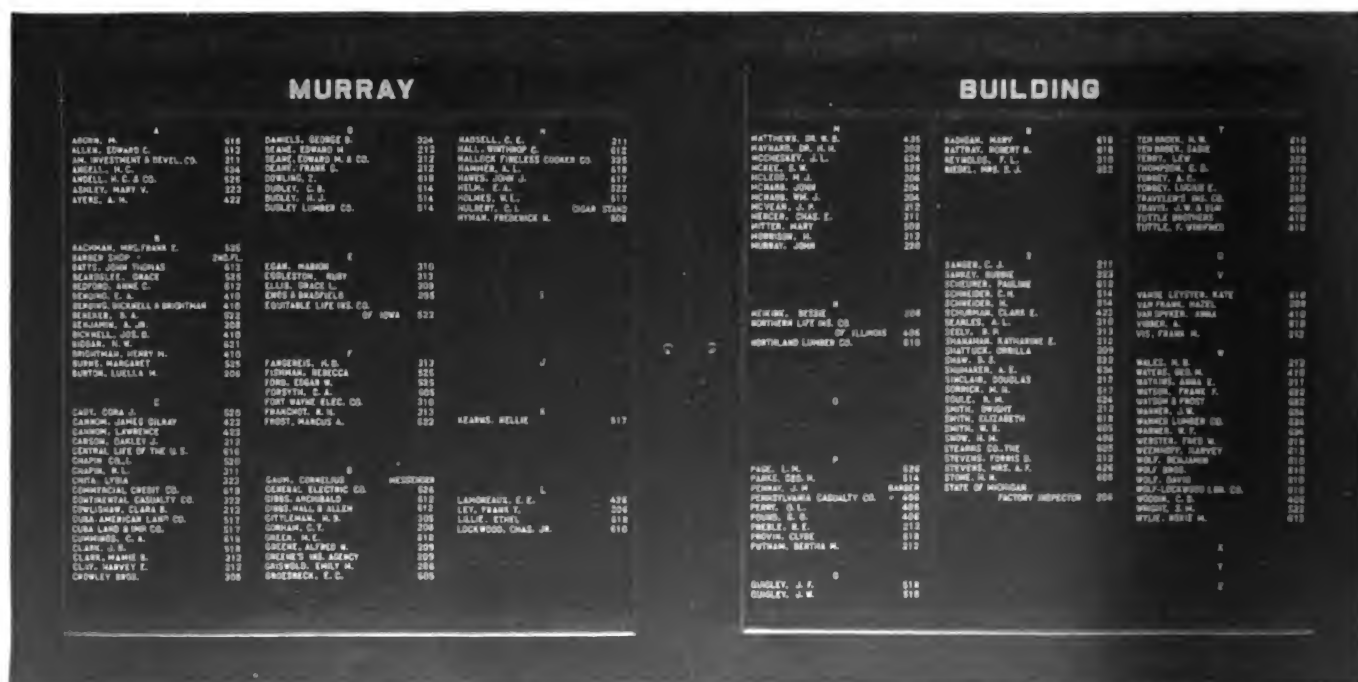
Accommodating the standard name card, $\frac{3}{4}$ " wide by $7\frac{3}{32}$ " long, using a $\frac{1}{4}$ " block letter.

CAPACITY, SIZE AND PRICE

Capacity Names	Number Tiers in Directory	Number Sections and Doors	Number Tiers in One Section	Frames Outside		Oak or Birch	Solid Mahog- any	Birch Lac- quered Black
				Width	Height			
50	1	1	1	12 $\frac{1}{2}$ "	26 $\frac{1}{2}$ "	\$18.00	\$19.00	\$19.50
75	1	1	1	12 $\frac{1}{2}$ "	35 $\frac{1}{2}$ "	24.00	25.00	25.50
100	2	1	2	19 $\frac{1}{2}$ "	33 $\frac{1}{2}$ "	30.00	32.00	33.00
125	2	1	2	19 $\frac{1}{2}$ "	37 $\frac{1}{2}$ "	37.50	40.00	41.25
150	3	1	3	26 $\frac{1}{2}$ "	31	45.00	48.00	49.50
175	3	1	3	26 $\frac{1}{2}$ "	34	52.50	56.00	57.25
200	4	2	2	39	29 $\frac{1}{2}$ "	60.00	64.00	66.00
225	3	1	3	26 $\frac{1}{2}$ "	40 $\frac{1}{2}$ "	67.50	71.50	73.50
250	4	2	2	39	32 $\frac{1}{2}$ "	75.00	79.50	81.75
300	4	2	2	39	39 $\frac{1}{2}$ "	90.00	95.00	97.50
350	6	2	3	53 $\frac{1}{2}$ "	28 $\frac{1}{2}$ "	105.00	111.00	114.00
400	6	2	3	53 $\frac{1}{2}$ "	32 $\frac{1}{2}$ "	120.00	126.50	129.75
450	6	2	3	53 $\frac{1}{2}$ "	38 $\frac{1}{2}$ "	135.00	142.00	145.50
500	6	2	3	53 $\frac{1}{2}$ "	41 $\frac{1}{2}$ "	150.00	158.00	162.00

Above quotations are F.O.B. Chicago and (with the exception of the 50 and 75 name sizes) cover the cost of the Directory complete with lettered heading card, lettered alphabet cards and blank name cards. Space is not allowed on the 50 and 75 name boards for alphabet cards. All other sizes accommodate twenty-six $\frac{3}{4}$ " by $7\frac{3}{32}$ " alphabet cards in addition to the designated number of $\frac{3}{4}$ " by $7\frac{3}{32}$ " name cards.

CHARGE FOR LETTERING CARDS—In all Directories the charge for lettering the name cards is a separate item; 10c per card for all cards ordered lettered and numbered before shipment of the original Directory order. Subsequent orders for lettered and numbered cards costing 15c each.



BIRCH FRAME, DULL BLACK LACQUER FINISH—300-NAME SIZE



Eberhardt & Co.

Manufacturers of

Tents, Awnings and Canvas Covers

122 CAPITOL AVENUE, SOUTH
INDIANAPOLIS, IND.

Established
1884

PRODUCTS—TENTS, AWNINGS, CAMP EQUIPMENT, CANVAS COVERS, GYMNASIUM MATS, PAULINS AND "NEVERLEAK" WATERPROOF DUCK; CARBONNEALE IRON PAINT

WATERPROOF COMPOUNDS for preserving Iron, Steel, Tin, Wood and Concrete

GENERAL—"Eberhardt" Products are of sterling quality and made by the most skilled labor. We countenance no imperfections; our products are thoroughly inspected before leaving our factory. We render prompt and efficient service at all times.

AWNINGS—Our New Model Window Awning, as shown, is designed for all buildings. It assures perfect ventilation, and is stormproof, economical, neat and durable. Prices sent upon request. Give full dimensions of window frame when ordering.



NEW MODEL WINDOW AWNING

TENTS—We make all the various styles for all purposes, from a small tent, 5 feet by 7 feet, to a large tent 120 feet by 128 feet. Our stock tents are of either 8-, 10- or 12-ounce duck, but we make to order any size, weight or brand of duck desired.

Our Concession Frame Tents with Gable or Hip Roof Ends may be had in stock sizes, with blue, brown or fancy stripe. Prices upon application.

Our Black Tent, shown below, is made after the most approved pattern, ensuring attractiveness with maximum wearing qualities. It is especially adapted for Moving Picture Machines, Illusions, Black Art, etc. All Black Tents are made to order, and we will quote prices and submit samples on any size and weight of duck desired.

CANVAS COVERS—We make all kinds of canvas covers and desire to call special attention to our "Neverleak" Waterproof Duck. This Duck Canvas is guaranteed by our special asphalt, oil or paraffin processes to be adapted for porch decks, roofs, etc. Prices quoted upon request. When ordering state size and material desired.

We make White Canvas Paulins for covering binders, threshing machines, stacks, wagons, cars and all kinds of merchandise.



BLACK TENT. MADE ONE END "ORLONG SQUARE" OR HIP, AND ONE END "GABLE"

"A.B.C." SYSTEMS



IDEAL X FOLDING CHAIR

Adjustable to four different positions. Weight 9½ lbs. Price per dozen, \$9.00.



LITTLE GIANT FOLDING COT

Open for use, 6' 2" long, 2' 4" wide; folded, 3' 0" x 4" x 5" supporting strength, 1000 pounds. Price per dozen, net, \$24.00.



TELESCOPE CAMP BED OR COT

Open for use, 6' 4" long, 2' 6" wide. Closed, 2' 10" x 7" x 5". Price, white heavy duck, per dozen, \$30.00; brown heavy duck, per dozen, \$32.00.

CARBONNEALE PAINT—For all metals, has been used with satisfaction on furnace doors where the temperature exceeds 2000 degrees. It is not affected by frost, heat or moisture, and is equally suitable for indoors and out.

Prices and other information sent upon request.

The Wollaeger Manufacturing Co.

Designers and Makers of Special Furniture

28 JUNEAU AVENUE
MILWAUKEE, WIS.

PRODUCTS—SPECIAL FURNITURE AND FIXTURES for Banks, Offices and Public Buildings in Wood, Marble and Bronze. Executed from Architects' or our own designs. Special Work only. No stock goods

RECENT IMPORTANT WORK—Among Contracts executed are equipments for Wisconsin State Capitol; Kentucky State Capitol; New Orleans Court House; Youngstown, Ohio, Court House; and Mercer, Pa., Court House.

LIST OF SOME OF THE PUBLIC BUILDINGS
EQUIPPED BY THE WOLLAEGER MFG. CO.,
MILWAUKEE, WIS.

Madison, Wis., State Capitol
Frankfort, Ky., State Capitol
Jackson, Miss., State Capitol
Richmond, Va., State Capitol

Helena, Mont., State Capitol
Olympia, Wash., State Capitol
New Orleans, La., Court House
Youngstown, Ohio, Court House

Mercer, Pa., Court House

Forman, N. Dak., Court House
Rugby, N. Dak., Court House
Akron, Ohio, Court House
Wilkes-Barre, Pa., Court House
Newton, Iowa, Court House
Montesano, Wash., Court House

Architects
Geo. B. Post & Sons
F. M. Andrews & Co.
Theo. C. Link
Associated Architects
of Richmond
Bell & Kent
W. A. Ritchie
P. Thornton Marye
Owsley, Boucherle &
Owsley
Owsley, Boucherle &
Owsley
Buechner & Orth
Buechner & Orth
J. Milton Dyer
McCormick & French
Proudfoot & Bird
Watson B. Vernon



WISCONSIN NEW STATE CAPITOL

Now in course of construction. Estimated cost, \$6,000,000. Geo. B. Post & Sons, Architects. All special furniture for completed portion of this building supplied by us

Petoskey, Mich., City Hall
Kenosha, Wis., City Hall
Milwaukee, Wis., Public Library & Museum
Pittsburgh, Pa., Carnegie Library & Museum
Washington, D. C., Library of Congress

Joseph Lindl
Ferry & Clas
Alden & Harlow
Bernard R. Green

CONTRACTS FOR FURNITURE NOW IN WORK FOR
THE FOLLOWING PUBLIC BUILDINGS

Pueblo, Colo., Court House

Kankakee, Ill., Court House
Brookings, S. Dak., Court House

Albert R. Ross and
Geo. W. Roe, Assoc.
Zachary T. Davis
Bell, Tyrie & Chapman

SOME OF THE BANKS EQUIPPED OR IN WORK

Antigo, Wis., The Langlade National Bank
Aberdeen, Wash., United States Nat'l Bank
Aurora, Ill., First National Bank
Akron, Ohio, The First-Second Nat'l Bank
Antigo, Wis., First National Bank
Beloit, Wis., Beloit State Bank
Beardstown, Ill., Beardstown State Bank
Billings, Mont., Billings State Bank
Belvidere, Ill., First National Bank
Beaver Dam, Wis., German National Bank
Central City, Neb., Farmers' State Bank
Canton, Ill., First National Bank
Canton, Ohio, The Geo. D. Harter Bank
Delavan, Wis., Bank of E. Latimer & Co.
Dallas, Texas, City National Bank
Dillon, Mont., First National Bank
Davenport, Iowa, First National Bank
Davenport, Iowa, German Savings Bank
Escanaba, Mich., First National Bank
Everett, Wash., First National Bank
Elgin, Ill., Home Savings Bank
Fond du Lac, Wis., First National Bank
Huntington, W. Va., Huntington Banking & Trust Co.
Ishpeming, Mich., Peninsula Bank
Johnstown, Pa., Farmers' Trust & Mortgage Co.
Jacksonville, Ill., The Farmers' State Bank & Trust Co.

Architects
Ferry & Clas
Chas. W. Hopkinson
Van Ryn & DeGellecke
G. McAlister
Geo. B. Printz
Claude & Starck
Sanguinet & Staats
Fred D. Dinkelberg
Charlton & Kuenzli

Kenosha, Wis., First National Bank
Madison, Wis., Bank of Wisconsin
Munising, Mich., Munising State Bank
Merrill, Wis., Lincoln County Bank
McKeesport, Pa., National Bank of McKeesport
Macomb, Ill., Macomb National Bank
Negaunee, Mich., First National Bank
New London, Wis., First National Bank
Oconomowoc, Wis., Bank of Oconomowoc
Ottawa, Ill., Ottawa Banking & Trust Co.
Omaha, Neb., United States National Bank
Pittsburgh, Pa., Germania Savings Bank
Portage, Wis., City Bank of Portage
Pittsfield, Ill., First National Bank
Racine, Wis., Commercial & Savings Bank
Rochester, Minn., First National Bank
Ripon, Wis., First National Bank
South Charleston, Ohio, Houston Bank
South Omaha, Neb., Packers' National Bank
Salt Lake City, Utah, National Copper Bank
Streator, Ill., Streator National Bank
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REFERENCES—We furnished all the interior work, as well as movable furniture for the **New York Public Library**, and also for the following buildings:

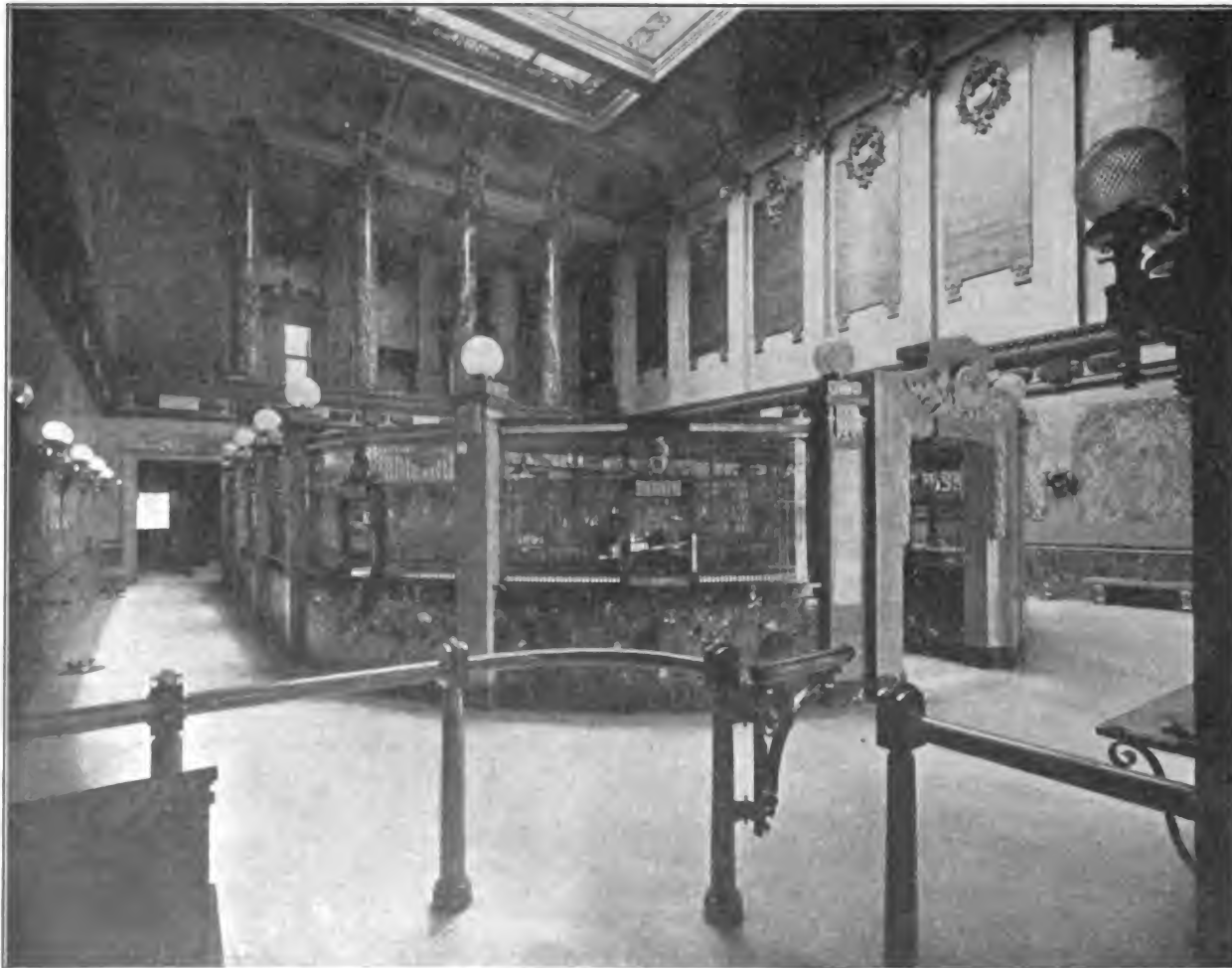
U. S. Senate Office Buildings, Washington, D. C.
 College of the City of New York, all Buildings.

National Union Bank, Baltimore, Md.
 Second National Bank, Cincinnati, Ohio.

Chemical National Bank, New York.
 Banco Nacional de Cuba, Havana, Cuba.
 Automobile Club of America.
 Rhode Island State Capitol, Providence, R. I.
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NEW YORK PUBLIC LIBRARY, NEW YORK, N. Y.



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"A.B.C." SYSTEMS

The Cott-a-lap Company

Manufacturers of

Dyed and Prepared Burlap, Canvases and Other Specialties

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For Interior Decoration, Including
FILMWOOD AND PAPERHANGER'S SIZES

CHICAGO OFFICE
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PRODUCTS—DYED BURLAPS of four different grades as follows: COTT-A-LAP, TEX-TA-DOR-NA, EUREKA AND MURO; PREPARED CANVASES AND MUSLINS; COTT-A-LAP PREPARED BURLAPS; PAPERHANGER'S SIZES; FILMWOOD, a genuine wood veneer backed up by paper for use in the decorative trade

DESCRIPTION—Cott-a-lap Dyed Burlaps differ from all other dyed burlaps on the market in two important respects. First, the colors are as fast to light as it is possible to dye a textile fabric. Comparison in a direct sunlight test of Cott-a-lap with a piece of yarn from any Turkish or Oriental rug is freely challenged. The other particular distinguishing Cott-a-lap from all other grades of burlap is the constancy of shade under varying illumination. This property is most important with browns and other broken tones. In the past it has been a common occurrence to see a rich brown turn to olive-green under gas or electric light. The importance of this point will be fully appreciated by all architects. It will be necessary only to think what might be the result at candlelight if carpets, drapery and upholstery vary in one direction and wall coverings in another. The most careful watch is kept at all times on these two points during the whole process of manufacture of Cott-a-lap dyed burlaps. Cott-a-lap dyed burlaps possess many other advantages which are not so unique as the two just mentioned. They are made on cloth specially woven in Dundee for the purpose, the very best cloth that can be purchased. The surface is rich and pleasing. The backing is perfect. Widths 36, 54 and 72 inches; between thirty and forty different shades of colors.

Cott-a-lap Prepared Burlaps, Canvases and Muslins, a large variety of materials for painting or calcimining after hanging. These cloths differ in weight, texture and finish, meeting practically all the requirements of the architect.

Tex-ta-dor-na, Eureka and Muro Dyed Burlaps are excellent materials where the requirements are not so exacting. Muro is the least expensive grade of all. It is by no means equal to Cott-a-lap, but will answer many purposes where durable and inexpensive burlap is required.

Soft Dyed Burlaps are carried in stock in three grades and about ten shades.

Filmwood is a very thin veneer (about 1/150 inch thick) or real wood backed with paper so that it can be hung just like wall paper. It is supplied in Mahogany, Quartered Oak and Black Walnut. It may be sandpapered, after being hung, and finished with oil, wax, varnish or any other method available for wood

work. It may be hung on any smooth surface such as plaster, wood, plaster-board, or metal. The surface should be lined with ordinary lining paper. Filmwood opens up endless possibilities in the way of paneled walls and ceilings. This is particularly interesting to those engaged in constructing fireproof buildings. as Filmwood gives a genuine wood surface on metal, plaster, fireproof asbestos lumber or any of the finishing materials used in such construction, the Filmwood being so thin that it will not add to the fire risk any more than wall paper does. In laying out panels the edges of the Filmwood should be covered with moldings or skeleton panel work. It is hung with ordinary flour paste. Directions accompany each shipment. Filmwood is cut from carefully selected logs. The sheets vary in size as determined by the logs available. Quartered Oak usually runs 10 or 12 inches wide, Mahogany 16 or 18 inches wide and Walnut usually about 15 inches wide. The logs are usually cut 10 to 12 feet in length. Filmwood is not rotary cut.

Paperhanger's Sizes—Bull Dog and Magic. The former is a dry powder soluble in cold water, the latter a liquid size soluble in cold water, instantly turning pink if applied to a wall containing free lime or other alkaline, thus indicating danger to wall coverings to be used later and giving a timely warning.

SIZE OF PACKAGES—All shades of Dyed Burlaps and Prepared Burlaps and Canvases are made in 36-inch widths and all 36-inch materials are put up in 50-yard rolls. The most popular colors of Cott-a-lap and Tex-ta-dor-na, as well as many of the Prepared Burlaps, are made in 54- and 72-inch widths, and put up in rolls of 30 running yards. Size of sheets of Filmwood depend on the dimensions of the log from which they are cut. Usually they are from 10 to 12 feet long. Magic Wallpaper Size is put up in 1/4, 1, 2 and 8 pound tins; Bull Dog in 1 lb. cartons and 100 lb. drums.

FACILITIES—The Cott-a-lap Mills are located at Somerville, N. J., and two side tracks of the Central Railroad of New Jersey extend into the property. This assures prompt and satisfactory shipping facilities. Large stocks of the Company's products are carried at Somerville and in Chicago and orders can be filled promptly from either place.

Large stocks are also carried by the principal wallpaper jobbers.

SAMPLES of all materials manufactured by the Cott-a-lap Company will be gladly furnished to architects upon request.

CORRESPONDENCE—The Cott-a-lap Company will be pleased to correspond with architects as to the suitability of different materials for special purposes or regarding any special requirements.

Standard Oil Cloth Company

Sanitas

Modern Wall Covering

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TRADE MARK

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DESCRIPTION—SANITAS is a cloth wall covering finished in oil colors. It is made in styles for every room in the house.

Sanitas is 48 inches wide and made in 12-yard rolls, equal to 18 square yards per roll.

DECORATIVE SANITAS includes tapestry, leather, fabric and imported wall paper effects.

TINTED SANITAS includes plain tints in dull finish suitable for side walls and ceilings.

GLAZED SANITAS includes plain tints as well as tiles and figures in attractive blues, greens and browns on white background.

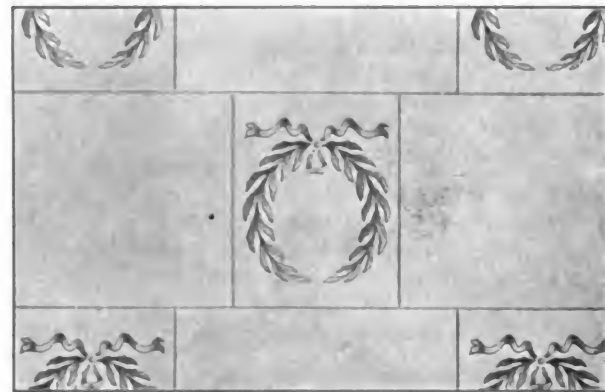
QUALITIES—Sanitas is sanitary—if it becomes dirty, simply wipe it off with a damp cloth.

Sanitas is durable—cannot tear or fade.

Sanitas is economical—costs less in the end than any other wall covering because it lasts the longest.

SPECIFY SANITAS—For hotels, dentists' and physicians' offices, public halls, as well as for any room in the home from laundry to attic. See what S. Osgood Pell & Company say about SANITAS.

The name, *Sanitas Modern Wall Covering*, is all the specification required.



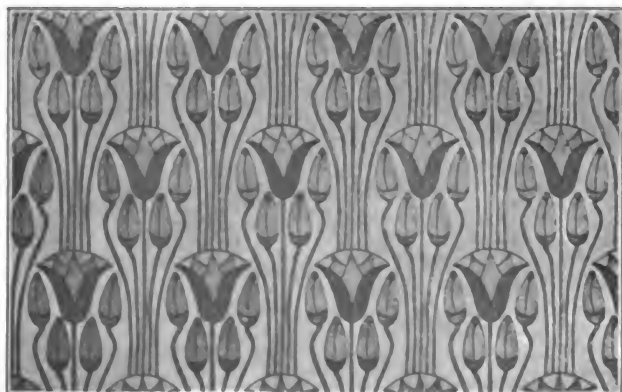
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"A.E.C." SYSTEMS

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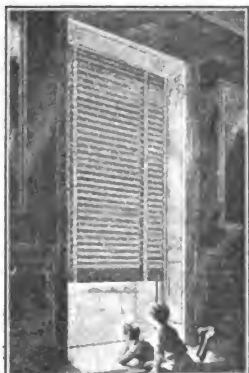
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This blind cannot be pulled up *unevenly* and the most careless handling cannot disturb the even adjustment of the slats.

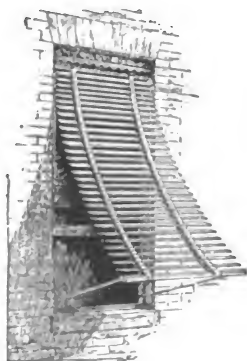


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SLIDING VENETIAN
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The frame, when not extended, sets close to window sash, and the side slats fold up closely in a small space. This style can be furnished without the side slats.

In new buildings an invisible pocket can be provided to receive the blind when pulled up.



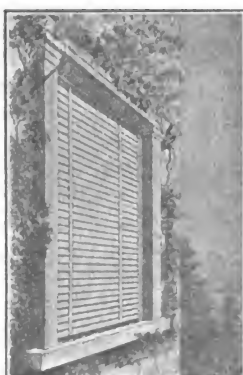
WINDOW IN WHITE HALL RESIDENCE OF H. M. FLAGLER, ESQ.,
PALM BEACH, FLA.
Note—New treatment of circular head.



WINDOW IN RESIDENCE OF HENRY GOLDMAN, ESQ., ELBERON, N. J.
Showing Wilson's Outside Venetian Awning Blind Extended with Slats Closed.
Note—Also the Sunburst Panel in circular head. This is a very artistic arrangement.

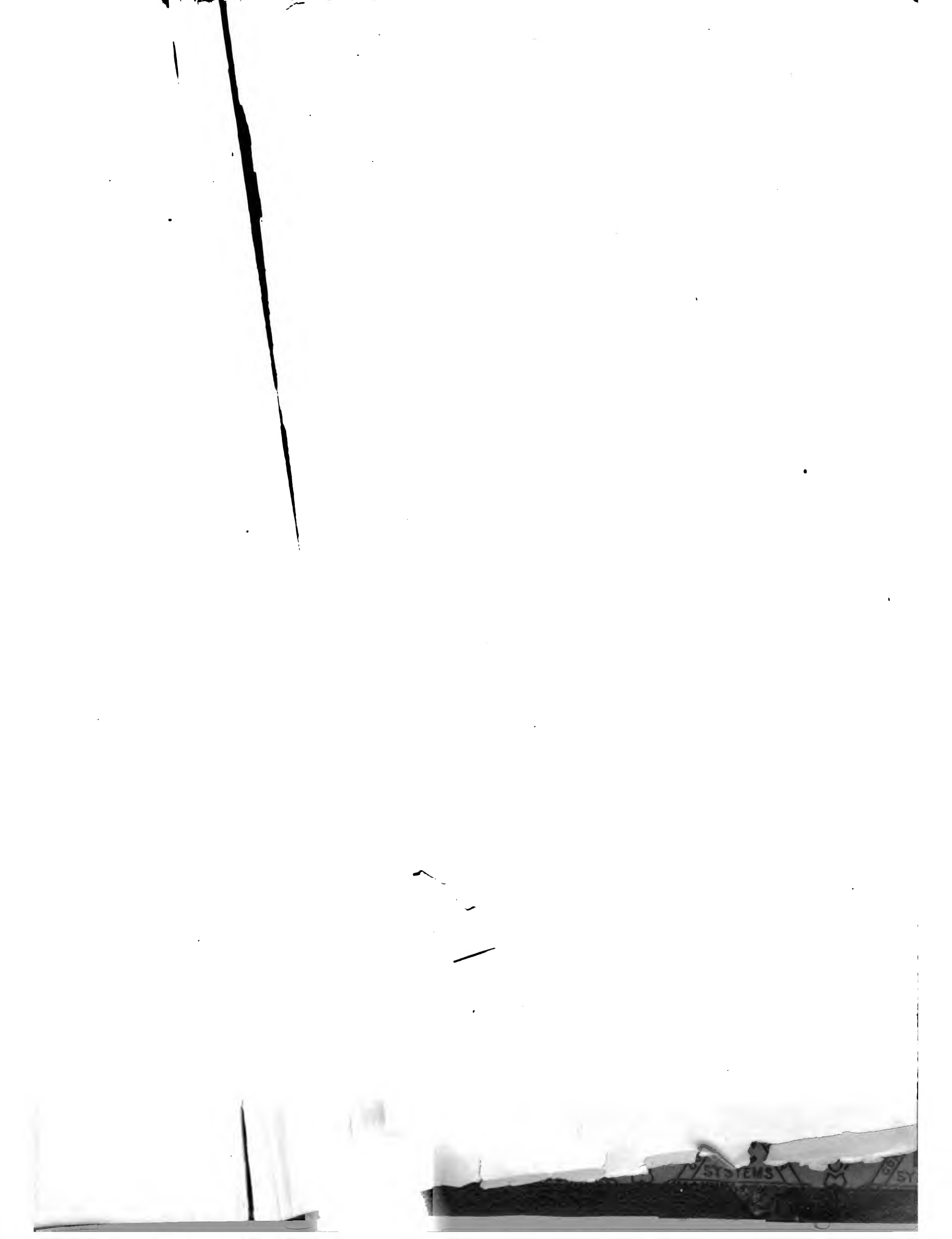


WINDOW IN RESIDENCE OF SAMUEL SACHS, ESQ., ELBERON, N. J.
Showing Wilson's Outside Venetian Awning Blind Extended with Slats Wide Open.



OUTSIDE VENETIAN
BLIND, CLOSED

Manufacturers without Catalog data	Sub-Index Numbers				Manufacturers without Catalog data	Sub-Index Numbers				Manufacturers without Catalog data	Sub-Index Numbers			
	1 to 5	6 to 10	11 to 15	16 to 20		1 to 5	6 to 10	11 to 15	16 to 20		1 to 5	6 to 10	11 to 15	16 to 20
					er Co., J. L. Chicago, Ill.	2								
Bogert & Hopper..... New York, N. Y.	1									Sargent, D. A. Boston, Mass.	4			
Brunswick-Balke-Collender Co., Chicago, Ill.	2 3				McMinn Sons, W. H. Brooklyn, N. Y.	3				Spalding & Bros., A. G., Inc. Chicopee, Mass.	1 4 5	6 7		
Burrowes Co., E. T. Portland, Me.	2				Medaria Co., Fred. St. Louis, Mo.	1 4 5								
					Merle & Loney Mfg. Co. Chicago, Ill.	2								
										Taylor & Co., Alexander.... New York, N. Y.	2 5			
					Narragansett Machine Co. Providence, R. I.	1 5								
Estes & Sons, E. B. New York, N. Y.	1									Willig Mfg. Co., Jacob. Chicago, Ill.	1 4 5	7		
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